JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

V. INDUSTRY SEMINARS AND SPEECHES - SHORT TERM

A. Appraisal Organizations

5. 1973

b. "A Guide to Real Estate Investment Analysis", sponsored by SREA and AIREA, April 18, 1973. (Also given to unknown audience in Tampa, FL January 1, 1974)

Index

A GUIDE TO REAL ESTATE INVESTMENT ANALYSIS

Joint Meeting of SRA and AIREA Chapters, Charlotte, N.C.
Wednesday, April 18, 1973

Instructed by Professor James A. Graaskamp
University of Wisconsin School of Business

MORNING SESSION: 9:00 A.M.

I. Basic Elements of Real Estate Financial Analysis

II. A Review of Real Estate Appraisal Financial Analysis

III. The Basic Elements of After-Tax Cash Flow Analysis

COFFEE BREAK: 10:30 A.M.

IV. Working through a Basic Problem for an Income Property

V. Working through a Basic Problem for Land Development Analysis

LUNCHEON: 12:00 noon

AFTERNOON SESSION: 1:00 P.M.

I. What Is Yield?

II. What Is Risk Analysis?

III. Fair Market Value or Investment Value?

IV. Financial Analysis for a Mortgage Loan Application

COFFEE BREAK: 2:30 P.M.

V. Analysis of a Limited Partnership Prospectus

VI. Recent Innovations in Financial Analysis

Outline to
Guide to Real Estate Investment Analysis

MORNING SESSION

I. Basic Elements of Real Estate Financial Analysis

A. The valuation process is a system of models which attempts to predict what a prudent man working for his economic betterment would do.

1. The market comparison approach is a logic model of if/then statements.
2. The cost approach is an aggregation model
3. The income approach is a simulation model

B. Simulation requires forecasting the cash cycle of an enterprise. Basic elements of a cash cycle forecast are:

1. The time-line of financial events for an enterprise
2. Schedules of outlays
3. Schedules of receipts
4. Measures of yield
5. Measures of risk

C. To make forecasting feasible it is necessary to simplify the future transaction pattern to the most important elements. Reducing a problem to basic relationships is called modeling. The basic considerations of a model as to its usefullness are:

1. What prediction or decision needs to be made?
2. What data is available to make it?
3. What theories and assumptions are available to structure the data?
4. What are the limitations of the model user?
5. What are the constraints on communicating the output?
6. What is the cost/benefit ratio of using the model?

D. The types of financial modeling decisions typically found in financial analysis are:

1. Economic allocation of all resources
2. Acceptance or rejection of a specific investment opportunity
3. Identification of the optimal combination of ingredients for a profitable opportunity
4. Sensitivity analysis of relationship of financial success to specific variables
5. Trade-off decision
6. Measuring tolerance for and probability of surprise (risk)

E. Comparison of critical assumptions for two investment valuation models or viewpoints in real estate:

1. The traditional income appraisal began with an economic model intended to best allocate the country's investment in capital improvements and land. (See Illustration 1, Col. A)

2. The Ellwood valuation model began with the need to accept or reject mortgage loan applications and a correlary question of how much to lend on acceptable properties. (Illustration 1, Col.B)

F. When the viewpoint changes from valuation of a property for a mortgage commitment to an equity commitment the assumptions from the Ellwood approach become too simple, too far removed from reality to be a useful model.

1. The question for the equity investor is which investment has the best probability of maximizing his net spendable cash in the future and his total accumulation of net worth over time with an acceptable level of risk and hassle.
2. Illustration 1, Col. C summarizes the assumptions of modern capital budget decision models.
3. Notice that it is no longer possible to have a single NOI in the numerator or in some cases, a single capitalization rate in the denominator. It will be necessary to do some accounting period by period.

G. Modern money management therefore requires the following inputs to a financial forecast and investment strategy.

1. The time line for significant financial events
2. A schedule and amount of outlays for each period

    a. Capital outlays
    b. Expense outlays
    c. Debt service outlays
    d. Tax outlays

3. A schedule and amounts of receipts for each period

    a. Operating revenues
    b. Sales proceeds
    c. Borrowed funds
    d. Derivative receipts or savings

4. Measures of yield

    a. Periodic dollars of profit
    b. Periodic return in dollars invested
    c. Average periodic return on total resources
    d. Total cumulative dollar increase in net worth

5. Measures of risk

    a. Capacity for absorbing surprise
    b. Range of variation in alternative outcomes
    c. Definition of maximum loss

II. Basic Money Management Theory

A. A real estate purchase is a capital budgeting decision and yet real estate professional societies teach capitalization as if the state of the arts was still the same as it was in 1935. To understand investment analysis is only necessary to calssify an investment as to type and the decision to be made.

B. Investment money managers distinguish between a conventional investment and a non-conventional investment by the pattern of outlays and receipts. Investment theory presumes outlays occur at the beginning of a period and proceeds are earned at the end of each period. A period is generally one year but might be a quarter or a month.

1. A conventional investment has one or more periods of outlays followed by one or more periods of positive cash proceeds. Negative cash proceeds (losses) are treated as outlays.

2. A non-conventional investment has one or more periods of outlays interspersed with periods of positive cash flows.

C. Assuming risk to be equal investment decisions attempt to provide a standard for choosing between alternative investment (courses of action) based on yield.

1. For an investor with relatively unlimited funds and opportunities, such as an insurance company, the problem is to make accept or reject decisions for many independent investments, generally accepting each if yield is greater than some minimum acceptable rate of discount.

a. Substitution theory and the cost of money
b. Ellwood theory began as device to screen loan submissions

2. Some investors have only enough money for a single site with which to make one investment and they are interested in shaping that investment to make the best profit possible within an acceptable limit of risk. A plant location problem where many sites may be profitable but where one site would be most profitable and only one plant would be built. Or there are engineering decisions to trade off one feature for another such as central air conditioning with higher rents, lower annual costs but higher initial investment as opposed to window air conditioners with average rents, higher depreciation, more responsibility and cost shifted to the tenant and higher finance charges. Such decisions are mutually exclusive, its one or the other.

a. Yield methods may give less accurate rankings for mutually exclusive decisions because they reflect average rather than incremental cash flows.
b. Mutually exclusive investments often involve marginal revenue versus marginal investment issues.

COMPARISON OF CRITICAL ASSUMPTIONS FOR THREE VALUATION MODELS OR VIEWPOINTS IN REAL ESTATE

Joint Meeting of SRA and AIREA Chapters, Charlotte, N.C.
Wednesday, April 18, 1973

By Professor James A. Graaskamp

Col. A Economic Allocation of Resources	Col. B Accept or Reject Loan Application or How Much to Lend?	Col. C Which Investment Has the Best Probability of Maximizing Net Spendable & Net Worth
1. Instant investment	1. Instant investment	1. Discontinuous series of outlays
2. Productivity limited to net income from parcel before debt and income tax	2. Productivity limited to parcel after debt but before income tax	2. Productivity is net change in spendable cash from all sources after devt and income tax traced to real estate.
3. Continuous income function	3. Continuous income function	3. Discontinuous series of tax classified receipts
4. Recapture from income	4. Recapture from income & resale	4. Payback of equity from spendable cash and debt from net revenue & resale.
5. Projected for full useful life of improvements	5. Projected for normal turnover period 5-10 years of typical investor	5. Projected for elapsed time of outlays and receipts for specific investor time line horizon.
6. Arbitrary discount factor	6. Weighted average Inwood discounting	6. Selected present value discounting based on characteristics of investor and property revenue pattern

D. Your appraisal training has already given you some introduction to the problem of defining what is profit and what is recapture of capital and therefore ranking of investments.

1. Straight line allocates earnings without recognition of a reinvestment rate and produces the lowest value.

2. Hoskold uses a sinking fund factor to recognize reinvestment at a safe rate and therefore releases more proceeds to income and produces a higher value than straight line approach.

3. Inwood defines reinvestment to be the same as a discount rate, therefore requiring smaller sinking fund amounts and releasing more to income thereby generating the highest value for the investment.

E. The ranking of alternative investments depends on a definition of yield and works best for pairs of alternatives and disintegrates as the number of alternatives increases. It will be shown by the end of the morning that an investment will be judged by a combination of yield factors in order to correctly define the investment from the standpoint of risk, the cost of money plans for use of the profits, and the viewpoint of the investor. Consider the following alternative measures of yield relative to four investments.

		Net Cash Proceeds Per Year	
Investment	Initial Cost	Year 1	Year 2
A	$10,000	$10,000	
B	10,000	10,000	$1,100
C	10,000	3,762	7,762
D	10,000	5,762	5,762

THE PAYBACK PERIOD

Investment	Payback Period (years)	Ranking
A	1	1
B	1	1
C	1.8	4
C	1.7	3

AVERAGE INCOME ON BOOK VALUE

Investment	Average Proceeds	Average Depreciation*	Average Income (Proceeds less Depreciation)	Average Book† Value	Income on Book Value,%	Ranking
A	$10,000	$10,000	$ 0	$5,000	0	4
B	5,550	5,000	550	5,000	11	3
C	5,762	5,000	762	5,000	15	1
D	5,762	5,000	762	5,000	15	1

* Assuming straight line depreciation, † investment divided by two.

AVERAGE INCOME ON COST

Investment	Cost	Average Income	Ave. Income on Cost,%	Ranking
A	$10,000	$ 0	0	4
B	10,000	550	5.5	3
C	10,000	762	7.6	1
C	10,000	762	7.6	1

PRESENT VALUE OF THE INVESTMENT Rate of Interest: 30%

Investment	Present Value of Proceeds	Present Value of Outlay	Net Present Value	Ranking
A	$ 9,450	$10,000	$ -570	4
B	10,413	10,000	+413	3
C	10,457	10,000	+457	2
D	10,564	10,000	+564	1

PRESENT VALUE OF THE INVESTMENT Rate of Interest: 30%

Investment	Present Value of Proceeds	Present Value of Outlay	Net Present Value	Ranking
A	$7,692	$10,000	$ -2,308	3
B	8,343	10,000	-1,657	1
C	7,487	10,000	-2,513	4
D	7,842	10,000	-2,158	2

SUMMARY OF RANKING

Measure of Investment Worth	A	B	C	D
Payback Period	1*	1*	4	3
Average Income on Book Value or Cost	4	3	1*	1*
Present Value: at 6%	4	3	2	1
at 30%	3	1	4	2

* Indicates tie between two investments

INCREMENTAL BENEFITS

Investment	Year	Cash Flows: Outlays	Cash Flows: Proceeds	Yield,%	Net Present Value at 5%
Y	0	$100.00		20	$27.89
	1		$20.00		
	2		120.00		
	0	100.00		25	23.58
	1		100.00		
	2		31.25		

Investment	0	1	2	Present-Value Index
X	$ -1,500	$1,000	$1,000	1.16
Y	-3,100	2,000	2,000	1.12

Investment	0	1	2	Present-Value Index
Y - X	$ -1,600	$1,000	$1,000	1.08

F. The real estate appraiser is generally familiar with investment decisions using a net present value method for decision making. Note that this method requires assuming a discount rate (9% in example below) and a stream of benefits and the object is to compute the maximum justified investment. Example:

An Income Property Costing $50,000 (PV0) Will Have the Following Cash Flows:

Year 1	$2,000 Income
Year 2	5,000 Income
Year 3	5,100 Income
Year 4	5,200 Income
Year 5	55,000 Income and Reversion

At 9% What is the Net Present Value (NPV) of the Property?

	Amount	P.V. Factor at 9%	P.V. Benefits (PVB)
Year 1	2,000	.9174	$ 1,834
Year 2	5,000	.8417	4,209
Year 3	5,100	.7722	3,938
Year 4	5,200	.7084	3,684
Year 5	55,000	.6499	35,745
			$49,410

PVB - PVO = NPV

$49,410 - $50,000 = -$590

CONCLUSION: Do Not Buy the Project

G. Many corporations wish to solve for yield when they know the outlay and they know the stream of benefits. The measure of yield which they use is the internal rate of return (IRR). The internal rate is that rate which makes net present value (NPV) equal to 0 or PVB equal to PVO. For example:

An Income Property Costing $20,000 Will Have the Following Cash Flows:

Year 1	2,000	Income
Year 2	3,000	Income
Year 3	3,000	Income
Year 4	3,500	Income
Year 5	20,000	Income and Reversion

Net Present Value at 11%

	Amount	P.V. Factor at 12%	P.V. Benefits (PVB)
Year 1	2,000	.8929	1,785.80
Year 2	3,000	.7972	2,391.60
Year 3	3,000	.7118	2,135.40
Year 4	3,500	.6355	2.224.25
Year 5	20,000	.5674	11,348.00
			19,885.05

PVB - PVC = NPV

$19,885.05 - 20,000 = 114.95

Net Present Value at 11.8375017151%

	Amount	P.V. Factor at 11.8375017151%	P.V. Benefits (PUB)
Year 1	2,000	.89415445	1788.3089
Year 2	3,000	.79951218	2398.5365
Year 3	3,000	.71488738	2144.6621
Year 4	3,500	.63921973	2237.2691
Year 5	20,000	.57156117	11431.2234
			20,000.0000

PVB - PVC = NPV

20,000 - 20,000 = 0

Internal Rate of Return (IRR): That Rate Which Makes NPV = 0
or PVB - PVC

IRR = 11.8375017151

H. Many institutions, however, feel that the internal rate of return is misleading or inappropriate for reasons particularly relevant to real estate.

1. The internal rate or Inwood discounting assumes that capital recapture is reinvested immediately at the same rate at which you are discounting. (Reinvestment rate)

2. More investments today are non-conventional - a series of outlays insterspersed with a series of returns and IRR cannot be computed by interpolation and algebraically the equation would have as many roots as there was a change in direction in net outlays per period versus net receipts.

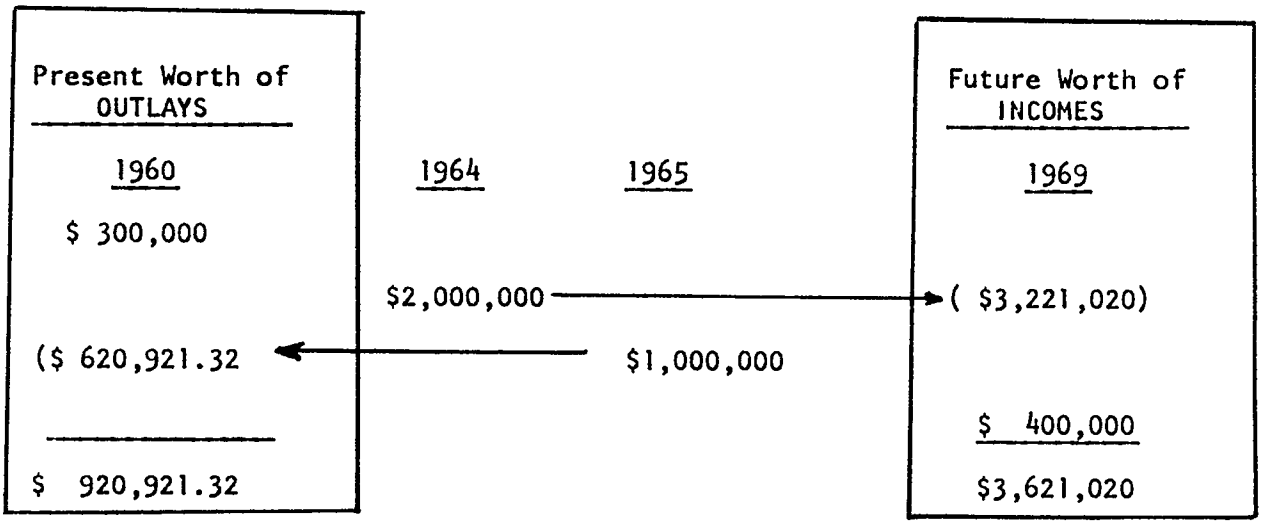
3. Equity investment does not occur on a continual basis but rather at erratic points in time and much equity money is qualified as limited partnership money, money raised by a public offering of stock, or participations as a condition of a loan with the result that the cost of money changes significantly over time and with the size of the project. Thus both the cost of capital and the reinvestment rate available for proceeds may differ from the yield on a specific investment.

I. The result that has been that development of what is called the modified internal rate of return (MIR). In MIR you first determine the present value of a series of outlays by discounting at the opportunity cost of capital. You then compound receipts forward to the end of a forecast period at the reinvestment rate. Having determined the present value of the outlay and the future compound value of the receipts, it is possible to solve for the internal rate of return. Consider the following example:

Suppose we have the following outlays and incomes:

OUTLAYS:	Jan. 1, 1960	$ 300,000
	Jan. 1, 1965	1,000,000
INCOMES:	Jan. 1, 1964	2,000,000
	Jan. 1, 1969	400,000

and the cost of capital rate is 10% p.a. compounded annually.



$$920,921.32\ (1 + i)^9 = 3,621,020.00 = 16.43\%$$

III. Basic Elements of After Tax Cash Flow Analysis

A. There are four kinds of benefit dollars available from investment in real estate.

1. Cash from operations at the income tax rate
2. Cash from sales at the capital gains rate
3. Cash from surplus due to refinancing (non-taxable)
4. Cash from tax savings on other taxable income

B. It is desirable to have a systematic method of classifying periodic returns and capital reversions from real estate on a pre-tax and after tax basis. (See outline)

C. It is useful to use a sample case to see how each element of cash flow is computed and the schedules necessary to support such a presentation. (See attached sample case)

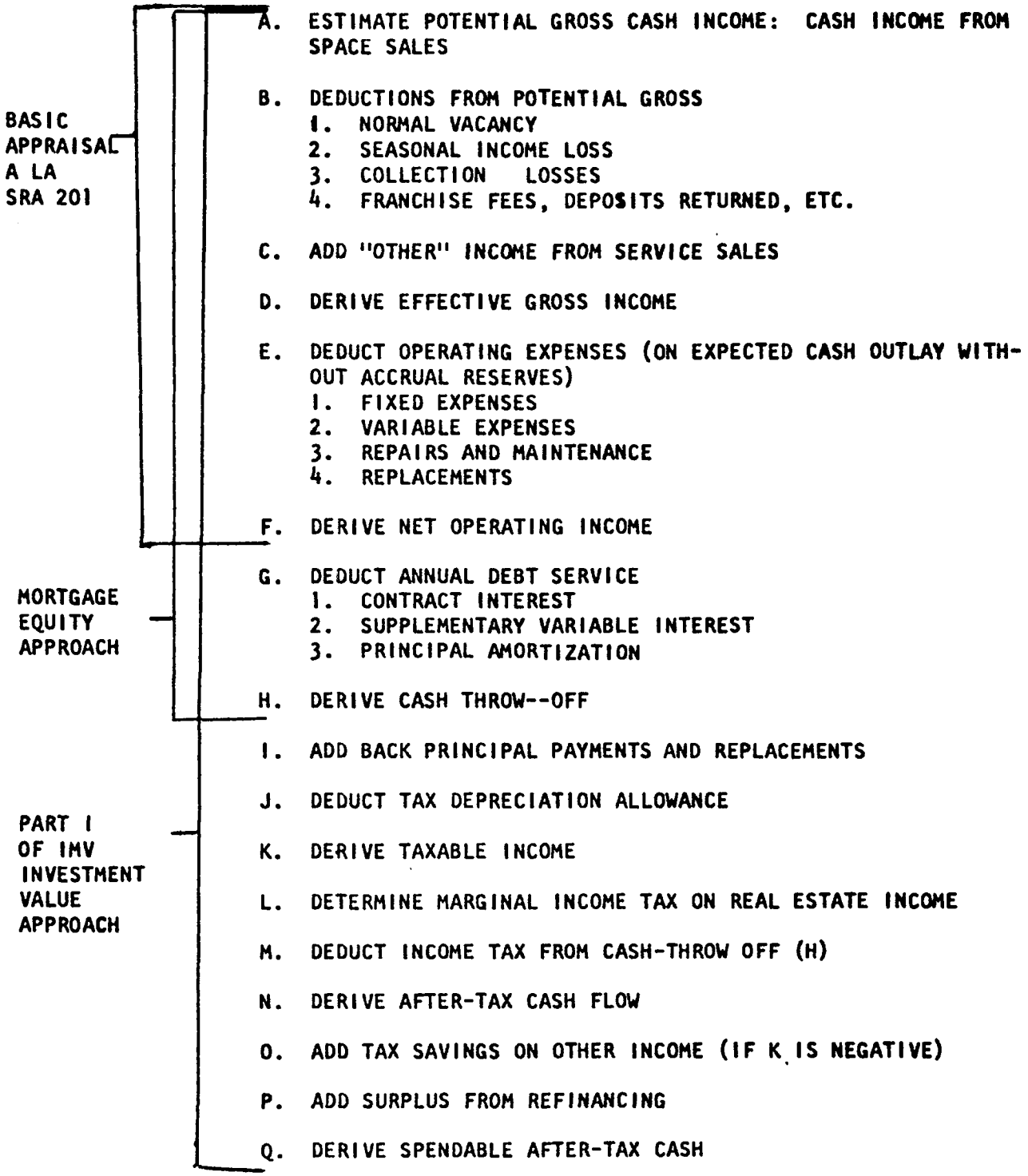
IV. Working Through a Basic Problem for an Income Property With a Simple Computer Model

A. Busy work computations are the type of thing computers do best and Mini-Mod is an example of a central teaching model. There are many superior computer models which you can use for your client in your office by means of computer terminals. That is what EDUCARE is all about.

B. A purchase and remodel problem (See "Analysis for Purchase of Apartment House Investment").

SYSTEMATIC ESTIMATION OF FORECAST ANNUAL INCOME FOR AN INCOME-PRODUCING PROPERTY

PART I. ANNUAL RETURNS TO INVESTOR



PART II. RESALE RETURNS TO INVESTOR (OVER)

J. Graaskamp

PART II. RESALE RETURNS TO INVESTOR

A. ESTIMATED RESALE PRICE (EOY)

B. DEDUCT BROKER'S COMMISSION AND OTHER TRANSACTION COSTS

C. DERIVE EFFECTIVE GROSS PROCEEDS FROM SALE

D. DEDUCT ALL CREDIT CLAIMS (EOY) OUTSTANDING
   1. SHORT AND LONG TERM NOTE BALANCES DUE
   2. PREPAYMENT PENALTIES
   3. DEDUCT EQUITY SHARES TO NON-OWNER INTEREST

E. DERIVE PRE-TAX REVERSION TO EQUITY

F. DEDUCT TAX CLAIMS ON OWNERSHIP INTEREST
   1. DEDUCT CAPITAL GAINS TAX
   2. DEDUCT INCOME TAX ON DISALLOWED ACCELERATED DEPRECIATION
   3. DEDUCT SURTAX ON TAXABLE PREFERENTIAL INCOME

G. DERIVE AFTER TAX RESALE PROCEEDS TO INVESTOR

V. A SAMPLE CASE

Valuation of a Real Estate Investment Involving Net Rental Variations, Leverage Accelerated Depreciation, Investor Tax Considerations and Price Appreciation

The following real estate investment analysis focuses on a property where the factors of increasing net rentals, leverage, accelerated depreciation, investor tax considerations, and price appreciation all have an important bearing on the property's total investment value. The property analysis incorporates the following assumptions:

(a) First year gross annual income of $140,000 increases by 3% per year for 10 years.

(b) Vacancy allowance is assumed to be 5% of gross income.

(c) Real estate taxes are $10,000 for the first year and increase at a rate of 2% per year.

(d) Expenses are $60,000 for the first year and increase at a rate of 3% per year.

(e) The total cost of the project is $950,000. Improvements are valued at $700,000. Land is valued at $250,000.

(f) Mortgage debt of $600,000 is available. This debt is to be amortized at 8% with annual payments of $54,000.

(g) The improvements will be depreciated through the use of the double declining balance method; the economic life of the improvements is 40 years.

(h) The project value is expected to grow at 3% per year.

(i) The investor's marginal income is taxed at 50%.

(j) An after-tax return on equity investment of 12% is sought.

(k) Capital gains on the sale of the property are taxed at 25%.

Schedule I
Present Value of Spendable Cash After Taxes
And Tax Savings On Other Income

	1	2	3	4	5
Gross Rent	140,000	144,200	148,400	152,600	156,800
Less Vacancy Allowance	7,000	7,210	7,420	7,630	7,840
Effective Gross Income	133,000	136,990	140,980	144,970	148,960
Less Real Estate Taxes	10,000	10,200	10,400	10,600	10,800
Less Expenses	60,000	61,800	63,600	65,400	67,200
Net Income	63,000	64,990	66,980	68,970	70,960
Less Depreciation	35,000	33,250	31,588	30,008	28,508
Less Interest	48,000	47,520	47,002	46,442	45,837
Taxable Income	-20,000	-15,780	-11,610	- 7,480	- 3,385
Plus Depreciation	35,000	33,250	31,588	30,008	28,508
Less Principal Payments	6,000	6,480	6,998	7,558	8,163
Cash Throw-off	9,000	10,990	12,980	14,970	16,960
Less Taxes	-	-	-	-	-
Cash From Operations	9,000	10,990	12,980	14,970	16,960
Working Capital Loan (Cum Bal)	-	-	-	-	-
Spendable Cash After Taxes	9,000	10,990	12,980	14,970	16,960
Tax Savings on Other Income	10,000	7,890	5,805	3,740	1,693
Spendable Cash After Taxes Plus Tax Savings on Other Income	19,000	18,880	18,785	18,710	18,653
P. V. Factor @ 12%	.8929	.7972	.7118	.6355	.5674
Present Value of Spendable Cash After Taxes plus Tax Savings on other Income	16,965	15,051	13,371	11,890	10,584

6	7	8	9	10
161,000	165,200	169,400	173,600	177,800
8,050	8,260	8,470	8,680	8,890
152,950	156,940	160,930	164,920	168,910
11,000	11,200	11,400	11,600	11,800
69,000	70,800	72,600	74,400	76,200
72,950	74,940	76,930	78,920	81,910
27,082	25,728	24,418	23,221	22,059
45,184	44,479	43,717	42,894	42,006
684	4,733	8,795	12,805	16,845
27,082	25,728	24,418	23,221	22,059
8,816	9,521	10,283	11,106	11,994
18,950	20,940	22,930	24,920	26,910
342	2,366	4,398	6,403	8,423
18,608	18,574	18,544	18,517	18,488
-	-	-	-	-
18,608	18,574	18,544	18,517	18,488
18,608	18,574	18,544	18,517	18,488
.5066	.4523	.4039	.3606	.3220
9,427	8,401	7,490	6,677	5,953

Depreciation, Mortgage Interest, Mortgage Principal, and Market Value Data

Depreciation										
	700000	665000	631750	600162	570154	541646	514564	488836	464418	441197
	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
	35000	33250	31588	30008	28508	27082	25728	24418	23221	22059
Mortgage										
	600000	594000	587520	580522	572964	564801	555985	546464	563181	525075
	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Interest	48000	47520	47002	46442	45837	45184	44479	43717	42894	42006
Principal	6000	6480	6998	7558	8163	8816	9521	10283	11106	11994
Total	54000	54000	54000	54000	54000	54000	54000	54000	54000	54000
Market Value										
	950000	978500	1007000	1035500	1064000	1092500	1121000	1149500	1178000	1206500

Schedule II
Total Investment Value of
A Real Estate Project

Total Present Value of Spendable Cash After Taxes plus Tax Savings on Other Income at 12% (Schedule I)				$105,809
Present Value of Net Proceeds From Sale of Property				
Total Sales Price			$1,206,500	
Less:				
Taxes on Sale of Property				
Capital Gains Tax	$113,168			
Income Tax	42,345	$155,513		
Unpaid Mortgage Balance		513,081	668,594	
			537,906	
Present Value Factor (12%)			.3220	173,206
Total Present Value of Equity Investment				$279,015
Original Mortgage Balance				$600,000
Total Project Value				$879,015

Example of Computing Taxes
on Sale of Property

Assumptions:

(a) Property held 10 years (120) months
(b) Basis equal to $669,138 (original basis equal to $950,000)
(c) Sales price equal to $1,206,500
(d) Depreciation taken on improvements of $700,000 equal to $280,862
(e) Had depreciation been taken on a straight line basis, depreciation would have been equal to $175,000
(f) Taxpayer is in the 50% bracket

Procedure for Determination of Tax:

Total Gain Subject to Tax: $537362	
Portion Subject to Capital Gains Tax:	
Increase in property value	$256,500
Amount which would have been taken through straight line depreciation	$175,000
Allowable accelerated depreciation (280,862-175,000) x .20	$ 21,172
	$452,672
Portion Subject to Ordinary Income Tax:	
Non-allowable Accelerated Depreciation (280,862-175,000) x .80	84,690
	$537,362
Capital Gains Tax ($452,672 x .25)	$113,168
Income Tax ($84,690 x .50)	42,345
Total Taxes on Sale	$155,513

UNIVERSITY OF WISCONSIN
Real Estate Investment Teaching Model
Demonstration Case Study #2

ANALYSIS FOR PURCHASE OF APARTMENT HOUSE INVESTMENT

1. Assume you wish to analyze the investment value at alternative purchase prices of a 24 unit apartment building, located at 2575 University Avenue, Madison, Wisconsin. The building has twelve two-bedroom apartments that each rent furnished for $140 per month and twelve one-bedroom apartments that rent each for $125 per month. The building is five years old, unfurnished, in need of maintenance and available as is for about $225,000.

2. The building is well located and vacant land in the area is selling for about $1700 per unit. This means that $40,000 of the purchase price could be designated as land value. In addition to the land and building, the purchase price could be allocated to include $12,500 for the elevator and $7,200 to the parking stalls.

3. Market analysis indicates that the building would rent very well if all the units were carpeted and furnished. For this work it is estimated that it would cost $600 per two-bedroom unit and $500 for each one-bedroom unit or a total investment of $13,200 by the prospective buyer.

4. The total capital expenditures could be allocated for depreciation purposes as follows, keeping in mind that the prospect would be a second user and therefore only entitled to a maximum of 125% declining balance except for his new investment in furnishing. The percent depreciable and the number of years of remaining useful life are reasonable estimates given some knowledge of the practices of the Internal Revenue Service and the condition of the building:

Land	$40,000	No depreciation allowed		
Parking	7,200	50%	10 yrs.	125%
Elevator	12,500	90%	12 yrs.	125%
Building	165,300	100%	35 yrs.	125%
Furnishings	13,200	100%	7 yrs.	sum of digits
Transaction costs	1,800	100%	35 yrs.	125%

5. After completion of repairs and refurbishing it is anticipated that the two-bedroom apartments will rent for $170 a month and the one-bedrooms $150 per month. The gross rent roll of the building would then be:

$$\$170 \times 12 \times 12 = 24,480$$

$$\$150 \times 12 \times 12 = \underline{21,600}$$

$$\$ \ 46,080$$

6. During the first year of changeover in ownership, refurbishing and re-leasing you estimate that each unit will be vacant about two months, that is about one-sixth of the time, (i.e. a vacancy of 17%) so that your average occupancy will

APARTMENT CASE STUDY #2

be 83% of potential for the first year. Thereafter you anticipate a normal vacancy rate of 5%, or an occupancy of 95%. Thus first year extra expenses include an additional 12% of future gross for rental losses.

7. The current real estate and personal property taxes to be paid in the first year following purchase are estimated to be $9,000. The normal current operating expenses, excluding real estate taxes but including management fees, are determined to be $8,400.

8. The property has been poorly maintained and will require additional expenditures of $2100 in the first year to justify the new rent schedule. This deferred maintenance charge will be added to the extra operating expenses of the first year washing it out as a tax deductible expense.

9. The buyer is considering this property because his accountant suggested that with his 30% tax bracket, including state and federal taxes, he should look for some tax shelter to offset some of his other current income. Using the accelerated method of depreciation, this real estate project should satisfy this requirement.

10. The investor feels that while the normal ratio of market value to income in his community ranges between 8% and 11%, proper financing should raise the pre-tax yield on his cash equity to at least 18%. The accountant suggests that if the investor considers the cash saved on deferred income taxes due to depreciation, the investor should seek at least 18% to 22% on his investment annually on an after-tax basis. His opportunity cost is 12% as that is his common stock return including capital gains.

11. The financing available to the investor would initially combine the assumption of a first mortgage with a balance of $180,000 with 240 months to run and a second mortgage taken back by the seller to be repaid in ten years, in monthly payments. The investor would plan to refinance both loans at the end of the sixth year of ownership when the prepayment penalty would lapse on the first mortgage. The seller feels he should receive $1000 as points on the second mortgage since that is the discount he will take when he sells the note.

1st Mortgage	180,000	20 year 5 year balloon	7 3/4%
Private loan	15,000	10 year 5 year balloon	8 1/2% $1000 discount

12. While the seller will pay for title insurance, a survey, and related items the buyer expects to pay about $800 in professional appraisal and legal fees related to this transaction. These fees plus points in #11 equal transaction costs of $1800 which increase original cash required and must be amortized over life of structure.

13. Temporary cash deficits at the end of any month can be covered with bank notes at a rate of 9% per annum and repaid out of positive cash flows when available.

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS

Real Estate Investment Teaching Model

February, 1971

Card 1

Student's Name	Last 2 Digits of Social Security #	Course & Section #'s	Equity Discount Rate	Income Tax Rate	# Cards #3	# Cards #4
MORTGAGE BANKERS SCH	[redacted]	-	.1800	.3000	[redacted]	[redacted]

Card 2

Project Description	Extraordinary Expenses	Cost of Equity Capital	Staging Multiplier	Staging Year
24 UNIT APT - CASE 2	7625	.1200	.	

Card 3

Component Description	Original Cost	Percent Depreciable	Depreciation Method	Starting Year	Useful Life
LAND	40000	0.0000	.	00	1 00
BUILDING	165300	1.0000	.	03	1 35
PARKING	7200	0.5000	.	03	1 10
FURNISHINGS	15200	1.0000	.	07	1 07
ELEVATOR	12500	0.8000	.	03	1 12
TRANSACTION COST	1800	1.0000	.	03	1 35
7TH YR REFURBISHING	10000	1.0000		01	8 07

Card 4

Mortgage Description	Principal Amount	Monthly Payment	Interest Rate	Bonus Interest Rate	Start	End	Term	Refinanced By Mortgage #
FIRST ASSUMED MORTG.	180000		.0775	.	01	05	20	03
SELLERS 2ND MORTG.	15000		.0850	.	01	05	10	05
REFINANCED FIRST	190000		.0800	0.0400	06	10	20	
REFURBISH CHATTEL	10000	150	.0900	.	08	10		

APARTMENT CASE STUDY #2

14. The financial plan is to maintain a highly leveraged position and therefore payoff the original loans at the end of the fifth year by obtaining a new mortgage. To discover some measure of influence of such refinancing on yield to equity and cash flows, the investor will assume that in five years the best loan he could obtain would equal $190,000 for 20 year term at 8$ interest. The age of the building at that time would require granting a bonus interest feature equal to 4% of gross rent as of the beginning of sixth year when the loan begins.

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS
Real Estate Investment Teaching Model
February, 1971
Basic Definitions of Model Outputs

1) Current period return on Net Worth before taxes =

$$\frac{\text{Cash Throw-off + Change in Net Worth}}{\text{Net Worth at End of Previous Year}}$$

2) Current period return on net worth after taxes =

$$\frac{\text{Spendable cash + tax savings on other income + (Change in net worth - change in cap. gains tax)}}{\text{Net worth at the end of previous year less capital gains tax of previous year}}$$

3) Cash return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total initial investment less initial mortgage debt}}$$

(This is adjusted for staged projects)

4) Cash return on original equity cash after taxes =
(This is adjusted for staged projects)

$$\frac{\text{Spendable Cash after taxes + Tax savings on other income}}{\text{Total initial investment cost less initial mtge. debt}}$$

5) Net income - market value ratio

$$\frac{\text{Net Income}}{\text{Market Value for the same period}}$$

6) After tax cash recovered - cash equity ratio (payback) =

$$\frac{\text{Accumulated spendable cash after taxes + accumulated tax savings other income}}{\text{Cash equity required}}$$

7) Default ratio =

$$\frac{\text{Operating Exp. + R.E. Taxes + Prin. \& Interest on Mtge. + Working Cap. Loan Prin. Repayment}}{\text{Gross Income}}$$

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS

Real Estate Investment Teaching Model

February, 1971

Card Type 5

Gross Rent	Expenses	Rental Growth Rate	Expense Growth Rate
46080	8400	.0200	.0200

Card Type 6

R E Taxes	R E Tax Growth Rate	Project Value Rate of Growth
9000	.0500	.0100

Card Type 7

Vacancy Rate	Working Capital Loan Interest Rate
.0500	.0900

To code Depreciation Method, use the following code no's.

0 = no depreciation
1 = sum of the digits
2 = straight line depreciation
3 = 125% declining balance
4 = 150% declining balance
5 = 200% declining balance

HAVE YOU CHECKED CARD 1 COLS. 61 and 64?

COMPONENTS	PCT. DEPR	BEGIN USE	USEFUL LIFE	DEPR METHOD	COST
LAND	.00	1	.	0	$ 40000.
BUILDING	1.00	1	35.	3	$ 165300.
ELEVATOR	.80	1	9.	3	$ 12500.
FURNISHINGS	1.00	1	7.	5	$ 13200.
PARKING	.50	1	10.	3	$ 7200.
TRANSACTION COST	1.00	1	35.	3	$ 1800.
7TH YR REFURBISH	1.00	8	7.	1	$ 10000.
TOTAL INITIAL INVESTMENT					$ 240000.

GROSS RENT	$ 46080.	RATE OF GROWTH OF GROSS RENT	.0200	
EXPENSES	$ 8400.	RATE OF GROWTH OF EXPENSES	.0200	
R E TAXES	$ 9000.	RATE OF GROWTH OF R E TAXES	.0500	
INCOME TAX RATE	.3000	RATE OF GROWTH OF PROJECT VALUE	.0100	
VACANCY RATE	.0500	WORKING CAPITAL LOAN RATE	.0900	
EQUITY DISCOUNT RATE	.1800	EXTRAORDINARY EXPENSES	$ 7625.	
STAGING YR(01),FACTOR	.00	COST OF EQUITY CAPITAL	.1200	

	1	2	3	4	5	6	7	8	9	10
CASH EQUITY REQUIRED	45000.	45000.	45000.	45000.	45000.	50000.	50000.	50000.	50000.	50000.

FINANCING PLAN

FIRST ASSUMED MORTG $ 180000.
MONTHLY PAYMENT $ 1477. INTEREST RATE .0775 STARTS 1 ENDS 5 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	3919.	4234.	4574.	4942.	5339.	.	.	.	.	.
INTEREST	13812.	13497.	13157.	12790.	12393.	.	.	.	.	.
BALANCE	176080.	171845.	167270.	162328.	156989.	.	.	.	.	.

SELLERS 2ND MORTG. $ 15000.
MONTHLY PAYMENT $ 185. INTEREST RATE .0850 STARTS 1 ENDS 5 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	994.	1082.	1178.	1282.	1396.	.	.	.	.	.
INTEREST	1236.	1148.	1053.	948.	835.	.	.	.	.	.
BALANCE	14005.	12922.	11743.	10460.	9064.	.	.	.	.	.

REFINANCED FIRST $ 190000.
MONTHLY PAYMENT $ 1589. INTEREST RATE .0800 STARTS 6 ENDS 10 BONUS INTEREST .0400 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	.	.	.	.	.	4016.	4349.	4710.	5101.	5524.
INTEREST	.	.	.	.	.	15054.	14721.	14360.	13969.	13546.
BALANCE	.	.	.	.	.	185983.	181634.	176924.	171822.	166297.

REFURBISH CHATTEL $ 10000.
MONTHLY PAYMENT $ 150. INTEREST RATE .0900 STARTS 8 ENDS 10 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	.	.	.	.	.	.	.	938.	1026.	1122.
INTEREST	.	.	.	.	.	.	.	861.	773.	677.
BALANCE	.	.	.	.	.	.	.	9061.	8035.	6913.

8) Lender Bonus Interest Rate =

$$\frac{\text{\% of effective gross (not to exceed cash throw-off for period)}}{\text{Balance due on loan at beginning of period}}$$

9) Resale Market Value at End of Year

Total Initial Investment Cost + Additional Staged Investment X Index for Year

10) Net worth of property =

Market value less balance of loans less working capital loans

11) A. Sales proceeds subject to capital gains tax =

Market value - (Total Capital Investment - Straight-line depreciation - Allowed excess depreciation)

B. Sales proceeds subject to income tax =

Cumulative depreciation taken - Straight-line depreciation - Allowed excess depreciation

C. Taxes on sale = (A X 1/2 Income Tax rate*) + (B X Income Tax Rate)
* Not to exceed 25%

12) Present value of project before taxes =

Original mortgage balance + PV of received stream of cash throw-off + PV of net worth if sold at end of year indicated by column number.

13) Present value of project after taxes =

Original mortgage balance + present balue of received stream of spendable cash after taxes + PV of received tax savings on other income + PV of (net worth less capital gains tax) if sold at end of year indicated by column number.

14) Cash Equity Required = $\sum$ \$ components utilized -

$\sum$ face value of mortgages in force

15) For each year N (net worth - cap gains tax) +

$$X = \int\int \sum_{}^{N} \left[(\text{Spendable Cash Aft Taxes + Tax Savings}) * (1. + \text{Cost of Equity Cap})^{N-1} \right]$$

Y = (LOG (X) - LOG (Original Investment)/N

Equity Rate = Exp (Y) - 1.

	1	2	3	4	5	6	7	8	9	10
GROSS RENT	46080.	47001.	47923.	48844.	49766.	50688.	51609.	52531.	53452.	54374.
LESS VACANCY ALLOWANCE	2304.	2350.	2396.	2442.	2488.	2534.	2580.	2626.	2672.	2718.
EFFECTIVE GROSS INCOME	43776.	44651.	45527.	46402.	47278.	48153.	49029.	49904.	50780.	51655.
LESS REAL ESTATE TAXES	9000.	9450.	9900.	10350.	10800.	11250.	11700.	12150.	12600.	13050.
LESS EXPENSES	16025.	8568.	8736.	8904.	9072.	9240.	9408.	9576.	9744.	9912.
NET INCOME	18751.	26633.	26891.	27148.	27406.	27663.	27921.	28178.	28436.	28693.
LESS DEPRECIATION	11578.	10038.	8847.	7913.	7169.	6565.	6067.	7790.	7178.	6223.
LESS INTEREST	15049.	14646.	14210.	13739.	13229.	17082.	16785.	17323.	16881.	16398.
TAXABLE INCOME	-7876.	1948.	3832.	5495.	7007.	4015.	5068.	3064.	4375.	6071.
PLUS DEPRECIATION	11578.	10038.	8847.	7913.	7169.	6565.	6067.	7790.	7178.	6223.
LESS PRINCIPAL PAYMENTS	4914.	5317.	5753.	6224.	6735.	4016.	4349.	5648.	6127.	6647.
CASH THROW-OFF	-1213.	6669.	6926.	7184.	7441.	30510.	6785.	15206.	5427.	5647.
LESS TAXES	.	584.	1149.	1648.	2102.	1204.	1520.	919.	1312.	1821.
CASH FROM OPERATIONS	-1213.	6084.	5777.	5535.	5339.	29306.	5265.	14287.	4114.	3826.
WORKING CAPITAL LOAN(CUM BALANCE)	1213.	.	.	.	.	.	.	.	.	.
SPENDABLE CASH AFTER TAXES	.	4762.	5777.	5535.	5339.	29306.	5265.	4287.	4114.	3826.
TAX SAVINGS ON OTHER INCOME	2363.	.	.	.	.	.	.	.	.	.

*

	1	2	3	4	5	6	7	8	9	10
MARKET VALUE	240000.	242400.	244800.	247200.	249600.	252000.	254400.	266800.	269200.	271600.
BALANCE OF LOANS	191298.	184767.	179014.	172789.	166054.	185983.	181634.	185985.	179858.	173211.
NET WORTH OF PROPERTY	48701.	57632.	65785.	74410.	83545.	66016.	72765.	80814.	89341.	98388.
CAPITAL GAIN	8131.	18662.	29193.	39724.	50255.	60786.	71317.	83277.	95046.	106605.
CAPITAL GAINS TAX	1219.	2799.	4378.	5958.	7538.	9117.	10697.	12491.	14256.	15990.
INCOME TAX ON EXCESS DEPRECIATION	1034.	1606.	1821.	1756.	1467.	997.	378.	.	.	.

*

	1	2	3	4	5	6	7	8	9	10
PERCENT INITIAL EQUITY PAYBACK AFTER TAX	.0525	.1583	.2867	.4097	.5283	1.0616	1.1669	1.2527	1.3350	1.4115
NET INCOME-MARKET VALUE RATIO	.0781	.1098	.1098	.1098	.1098	.1097	.1097	.1056	.1056	.1056
RETURN ON NET WORTH BEFORE TAXES	.0552	.3203	.2616	.2403	.2227	.1553	.2050	.3195	.1726	.1644
RETURN ON NET WORTH AFTER TAXES	.0846	.2484	.2280	.2122	.1976	.1430	.1977	.1770	.1591	.1483
CASH RETURN ON ORIG CASH EQUITY BEF TAX	-.0269	.1482	.1539	.1596	.1653	.6102	.1357	.3041	.1085	.1129
CASH RETURN ON ORIG CASH EQUITY AFT TAX	.0525	.1058	.1283	.1230	.1186	.5861	.1053	.0857	.0822	.0765
DEFAULT RATIO	.9763	.8333	.8054	.8029	.8004	.8204	.8185	.8508	.8484	.8461
LENDER BONUS INTEREST RATE	.0000	.0000	.0000	.0000	.0000	.0122	.0110	.0115	.0114	.0120

*

	1	2	3	4	5	6	7	8	9	10
PRESENT VALUE OF PROJECT BEFORE TAXES	236272.	241180.	244044.	246091.	247482.	246720.	247239.	254941.	254808.	254543.
PRESENT VALUE OF PROJECT AFTER TAXES	236364.	238649.	240204.	241194.	241709.	240691.	241002.	245953.	245633.	245179.
EQUITY RATE W/ COST OF CAPITAL AT .120	.0846	.1607	.1785	.1825	.1817	.1741	.1716	.1683	.1648	.1615

GRAASKAMP ISLAND CASE

A fertile Tropical Paradise has just been discovered of the coast of Milwaukee. The product of tumultuous upheavals and faulting along the earth plates, the new island has a year-round climate comparable to Tahiti.

First on the scene and to lay claim to this island paradise was the renowned international explorer, Chief Graaskamp and crew. After a quick reconaissance Graaskamp has decided to drop anchor and examine the opportunities for development and operation of sales and rental apartments.

The Chief is thoroughly experienced in land development in the frosty North, but tropical development is virgin territory. Preliminary cash flow analysis for building and operations indicate that an equity investment of $5.8 million will be required, but no investors are interested.

Milwaukee radio reported that new rumblings were heard in the vicinity of the new island.

Is Graaskamp Island sinking, or can it be saved?

ILLUSTRATIVE LAND VALUE ANALYSIS FOR SALE HOUSING UNITS

DETACHED HOMES @ 3.0 D.U.'s/ACRE

GRAASKAMP ISLAND

(1973 Prices in 1972 Dollars)

	Average Unit[1/] 1,600 s.f.
I. Estimated Development Costs	
A. Construction and Site Costs @$14.00/s.f. 2/	$22,400
B. Non-Construction and Site Costs @ 5% of Construction	1,120
Subtotal	$23,520
C. Promotion-Sales (@ 6% of Sale Price)	2,460
D. Developer's Profit Allowance (@15% of Sale Price)	6,150
E. Total Cost, Excluding Land	$32,130
II. Sale Price, Supportable Ground Value	
A. Sale Price	$41,000
B. Less Total Cost	32,130
C. Supportable Ground Value per unit	$ 8,870
D. Supportable Ground Value as a percent of Sales Price	22%
E. Average Density (D.U.'s/acre)	3.0
F. Supportable Ground Value per acre	$26,610

1/ Average unit excluding basement and garage.

2/ Marshalls Valuation Service, average construction cost adjusted for Graaskamp Island prices in September, 1972. Square foot costs include "bricks and mortar", sewer hook-up, architect fee, building permits, appliances, and builder's profit applied to gross living area.

3/ Real Estate taxes during construction and construction financing.

ILLUSTRATIVE LAND VALUE ANALYSIS FOR RENTAL HOUSING UNITS

GARDEN APARTMENTS @ 15 D.U.'s/ACRE

GRAASKAMP ISLAND

(1973 Prices in 1972 Dollars)

1. Estimated Improvement Cost		
A.	Construction @ $13 per square foot[1/] @ 1,000 s.f.	$14,300
B.	Non-construction @ 5% of construction cost [2/]	700
C.	Landscaping and Site Work	500
D.	Total Improvement Cost	$15,500
2. Net Income from Operations		
A.	Gross Income (@ $240/month or 24¢/s.f.)	$ 2,880
B.	Less 5% Vacancy and Collection Allowance	144
C.	Plus Other Income @ $3/month	36
D.	Gross Effective Income	$ 2,772
E.	Less Operating Expenses and Real Estate Tax (@ 37% of gross)	$ 1,025
F.	Net Operating Income	$ 1,747
3. Financing		
A.	Economic Value at 9.5% Capitalization Rate	$18,390
B.	Mortgage at 75% of Economic Value	13,792
C.	Debt Service at 9.5% Constant (i.e., 25 years at 8.25% Interest)	$ 1,310
4. Net Cash Flow		
A.	Net Operating Income	$ 1,747
B.	Less Debt Service	1,310
C.	Net Cash Flow	$ 437
5. Residual Values		
A.	Equity @ 15% ROE	$ 2,914
B.	Mortgage	13,792
C.	Total Supportable Costs	$16,706
D.	Improvement Cost	15,500
E.	Residual Value of Land	$ 1,206
F.	Average Density (D.U.'s/acre)	15.0
G.	Residual Value per acre	$18,090

1/ Gross living area; excludes unfinished bas

1/ Marshalls Valuation Service, average construction cost adjusted for Graaskamp Island prices in September, 1972. Square foot costs include "bricks and mortar", sewer hook-up, architect fee, building permits, appliances, and builder's profit applied to gross living area.

2/ Real Estate taxes during construction and construction financing.

BUILDING & OPERATIONS CASHFLOW

GRAASKAMP ISLAND

THOUSANDS OF 1972 $

L/C		1973	1974	1975	1976	1977	TOTAL
A. DEVELOPMENT ACTIVITIES							
SOURCES OF FUNDS							
1 SINGLE FAMILY	SALES	....	2533	5002	5152	5168	17856
2 MULTI-FAMILY	RENTAL	....	256	323	424	421	1425
3 TOTAL		....	2790	5325	5576	5589	**19282**
APPLICATIONS OF FUNDS							
LAND							
4 SINGLE FAMILY		548	1082	1114	1118	....	3863
5 MULTI-FAMILY		231	291	382	379	....	1285
6 SUBTOTAL		779	1373	1497	1497	....	5148
CONSTRUCTION							
7 SINGLE FAMILY		1411	2704	2704	2634	....	9455
8 MULTI-FAMILY		1395	1705	2170	2092	....	7362
9 SUBTOTAL		2806	4409	4874	4726	....	16817
OPERATIONS & SALES							
10 S-F SALES COMMISSION		....	152	300	309	310	1071
11 M-F OPERATING EXPENSES		....	95	119	156	155	527
12 SUBTOTAL		....	247	419	466	465	1598
13 TOTAL APPLICATIONS		3586	6030	6791	**6690**	**465**	**23565**
NET CASH FLOW FROM DEV. ACT.							
14 ANNUAL		-3586	-3240	-1466	-1114	5123	-4283
15 CUMULATIVE		-3586	-6826	-8292	-9406	-4283	....
B. CAPITAL ACTIVITIES							
SOURCES OF FUNDS							
16 MORTGAGE PROCEEDS		....	1278	1608	2109	2094	7090
17 LIQUIDATION		....	....	....	....	11629	11629
18 SUBTOTAL		....	1278	1608	2109	13723	18719
APPLICATIONS OF FUNDS							
19 MORTGAGE INTEREST		....	108	243	417	585	1354
20 PRINCIPAL REPAYMENTS		....	26	61	110	6891	7090
21 DEBT SERVICE		....	135	305	527	7477	8445
22 NCF FROM CAPITAL ACTIVITIES		....	1143	1303	1581	6246	10274
C. PROJECT NET CASH FLOW							
23 ANNUAL		-3586	-2097	-162	466	11369	5991
24 CUMULATIVE		-3586	-5683	-5845	-5378	5991	....

LINE 23 (COL 1 - 5) INTERNAL RATE-OF-RETURN IS 21.845%

LINE 23 (COL 1 - 5) NET PRESENT VALUE IS 1275.29 AT 15.00%

Outline to
Guide to Real Estate Investment Analysis

AFTERNOON SESSION

I. Any measure of yield requires careful definition of what is an annual profit and what will be included in resale proceeds and an explicit assumption about the opportunity cost of money or the reinvestment rate.

A. Refer to definitions on page of Case problem #2.

B. Refer to alternative definitions of annual profits and sales proceeds as found in limited partnership agreements by Stephen Roulac.

"Annual Returns"

1. Taxable income,
2. Net profit only (i.e. not net loss),
3. Taxable income calculated on the basis of straight line depreciation,
4. Net profit calculated on the basis of straight line depreciation,
5. Cash available for distribution before allowance for reserves,
6. Cash available for distribution after allowance for reserves,
7. Cash actually distributed,
8. Cash available for distribution before allowance for reserves plus the amount of that year's principal payment on the mortgage debt,
9. Cash available for distribution after allowance for reserves plus the amount of that year's principal payment on the mortgage debt,
10. Cash actually distributed plus the amount of that year's principal payment on the mortgage debt,
11. Cash available for distribution before allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket,
12. Cash available for distribution after allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket.
13. Cash actually distributed plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket,
14. Cash available for distribution before allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket plus the amount of that year's principal payment on the mortgage debt,
15. Cash available for distribution after allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket plus the amount of that year's principal payment on the mortgage debt,
16. Cash actually distributed plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket, plus the amount of that year's principal payment on the mortgage debt.

Definitions of "Sales Proceeds"

1. Gross sales price,
2. Gross sales price less closing costs and real estate sales commissions, also known as the net sales price,

3. Net sales price less beginning mortgage balance,
4. Net sales price less mortgage balance at time of sale,
5. Net sales price less purchase price,
6. Net sales price less the mortgage balance at time of sale less the initial equity investment,
7. Net sales price less the mortgage balance at the time of sale less the initial equity investment plus the sum of returns, however defined, distributed to the limited partners,
8. Net sales price less the partners' basis for tax purposes (the purchase price less accumulated depreciation),
9. Net sales price less the partners' basis for tax purposes less the amount necessary to pay taxes at some specified rate,
10. All cash, after payment of mortgage balance at time of sale, including refund of working capital, unused reserves, and unallocated reserves.

C. Suggestions for the appraiser looking for a standard on which to base valuation judgments:

1. Relate to purpose of appraisal and significance of hard dollar and soft dollars to the viewpoint to be served
2. Ellwood method
3. EDUCARE standard models for the investor/buyer
4. Standard assumptions to be promulgated by SEC
5. The appraisal customer's ideal preferences

II. Modern management defines risk as the potential variance between expectations and realizations, i.e., between proforma prospects and balance sheet and P & L statements:

A. Dynamic risks can produce profit or loss and are best controlled by the finesse of management execution of a plan.

B. Static risks are those which can only cause a loss due to surprise upset of a plan.

C. Risk management has two objectives:

1. Conservation of existing enterprise assets despite surprise events
2. Realization of budgeted expectations despite surprise events

D. The process of risk management involves:

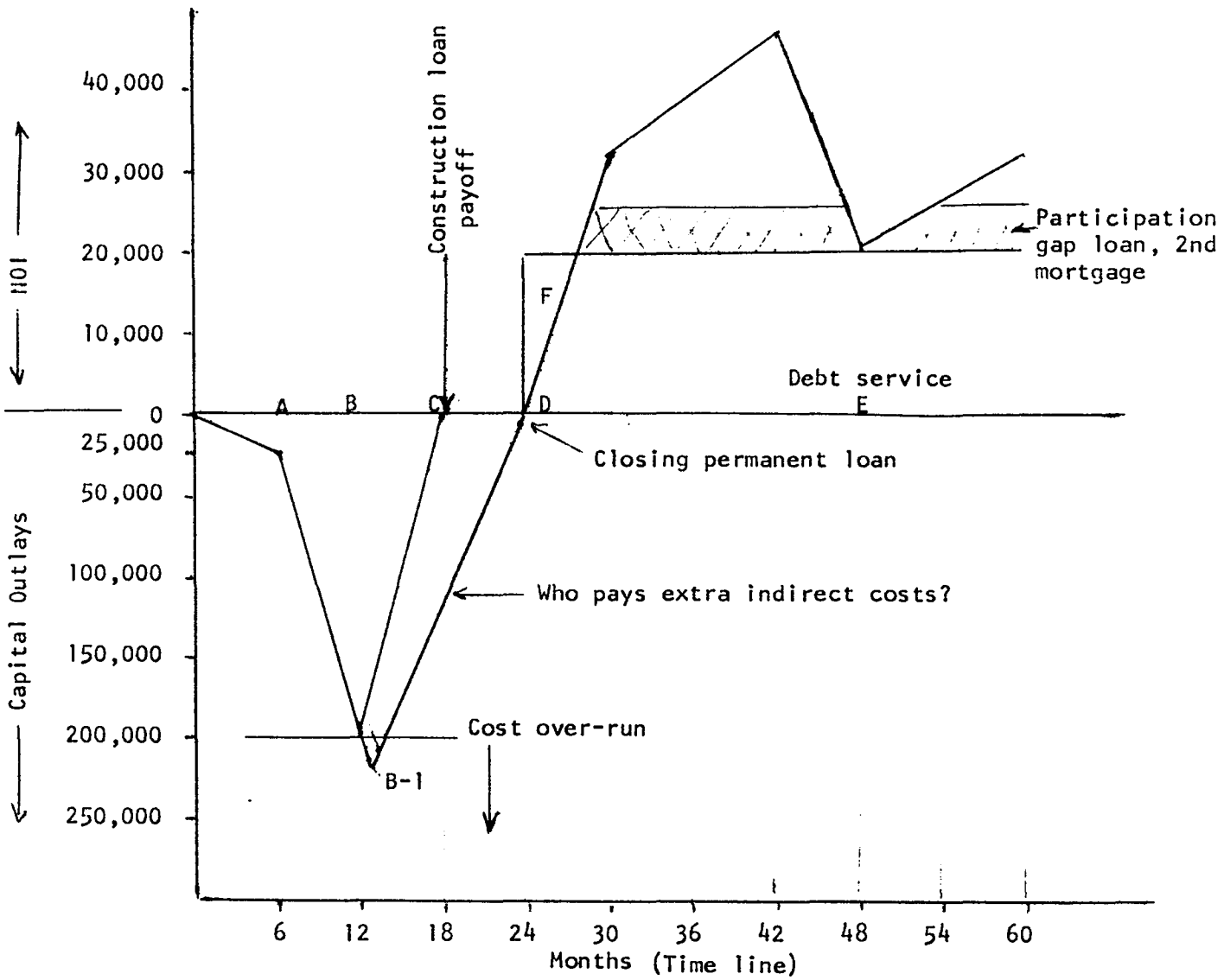
1. Identification of significant exposures to loss
2. Estimation of potential loss frequency and severity
3. Identification of alternative methods to avoid loss
4. Selection of a risk management method
5. Monitoring execution of risk management plan

E. Alternative methods for surviving potential risk losses:

1. Eliminate uncertainty (research or confirm)
2. Reduce frequency or severity of loss contingencies (incentive contracts)
3. Combine risks to increase predictability (reserves for expenses or pool investments)

4. Shift risk by contract (subcontracts or escape clauses)
5. Shift risk by combination by contract (insurance)
6. Limit maximum loss (corporate shell or limited partnership)
7. Hedging (gap financing)

F. A graphic representation of real estate cash flows will serve to review the nature of yield and risk control in real estate financing and investment and provide a method for analyzing loan opportunities or limited partnerships.



A = Start of construction
B = Estimated completion date
B-1 = Actual completion date
C = Construction loan payoff
C-D = Gap financing period
D-E = Positive cash flow and gap loan participation
F = Negative cash throw-off

2nd Edition

"MARKET VALUE" NOT ALWAYS APPLICABLE TO INVESTMENT PROPERTY OWNERS

"Market value", under its hundreds of state and federal court definitions, has been acceptable to the real estate appraiser as the fair measurement of just compensation (for all but special use properties) under eminent domain, estate and gift tax, property tax assessment and other situations. It is also applied as one of the two standards for assessment by assessment appraisers. Most definitions of market value mention a "price" and a "willing seller" and a "willing buyer". Even those which do not name or refer to a "seller" have been interpreted to carry the inference that the seller would be willing to sell at the price the buyer could afford to pay.

It is believed, however, the "market value" premise has been erroneous and thus inapplicable to numerous investment properties in the price range which attracts long term mortgagees and high tax bracket equity investors, ever since the investment market began to exploit the capital depreciation methods of the 1954 Internal Revenue Code. That code provided the first uses of the 200% of straight-line-declining-balance and the sum-of-the-years-digits methods; and the code has not been sufficiently modified by the 1962 and 1969 revisions to discourage but a small portion of investors in creating new properties or buying operating properties primarily - and often exclusively - for sheltering taxable income derived both from the newly acquired properties and from other investments and earnings.

This 7-page handout demonstrates the three major reasons for the obsolescence in the age-old definitions of market value: site cost basis, capital depreciation method, and secondary mortgage financing often provided by the seller of the land, on a non-transferable basis.

In this example the first owner of a one-year old, 250-unit apartment property has constructed the building on a site he acquired at a price of $720,000, $511,000 of which price was taken back as a deferred, long term purchase money trust to be subordinated to the mortgage loan on the completed property. The terms of the purchase money trust note call for full prepayment in event the property is resold.

Through his superlative mortgage financing and his use of the most accelerated depreciation method on the new building, the first owner and user of the property could not now afford to sell at the price which another investor in the same federal and state income tax brackets could afford to pay for the property, as the second user. Reasons: the second user could employ only 125% SL/DB depreciation, would not be allowed to claim that the non-depreciable asset, the land, is of less than $720,000 in value, and would not enjoy the long term second mortgage loan as would the first owner. The major assumptions in this example follow:

McCloud B. Hodges, Jr., 6819 Elm St., McLean, Va. (15 Nov. 1972)

1. No monetary inflation or deflation considered; future net income and resale value forecast on basis of constant dollars. Equity yield employed matches the extrapolated yields from recently sold, similarly priced investment properties, all on the constant dollar premise.

2. Future resale value of the property, if held by the first owner for an optimum term of 12 years, is calculated to be the capitalized worth of the next average annual net income stream ($335,650 at OA rate of .10) less $250 per apartment unit for major capital replacements at date of future reversion; and, for the second owner, under his optimum ownership term of 10 years, to be the capitalized worth of the next average annual net income stream ($358,000 at OA rate of .10) less $200 per apartment unit.

3. The new first mortgage loan, closed two months ago when the building reached 85% occupancy, is more than the laughable "75% of value" to the second owner and user, but is quite typical and realistic. It is based upon a required 125%-of-debt-service (25% coverage ratio) against the "stablized" net annual income projected at 95% occupancy. The terms of this mortgage note do not preclude its assumption by another owner of the property, if approved by the mortgage lender.

4. First owner, for tax reasons, has capitalized some of his entreprenural expenses (mortgage and construction loan application fees, architectural and legal fees) as part of his capital costs, totalling $3,700,000; while today's hypothetical buyer and second user will be allowed to depreciate only that portion of his purchase price which excludes the $720,000 site value.

See next the two IMV computer printouts (*) showing,

Investment market value to the first owner = $4,419,676

Investment market value to the second owner = 3,980,860

Difference = 438,816 (11.02%)

Although the entreprenural builder-owner has not invested nearly as much cash as is indicated in the first computer printout, the equity cash figure shown represents the present worth of his entreprenural profit, his actual cash investment and the after-tax losses incurred in his expenses of construction loan interest, advertising and building operation during the rent-up period - all as of the date of valuation.

This real estate valuation analysis is written to invite attention to the need of some of the older professions and occupations to modernize their practises in dealing with this branch of land economics. It should also encourage the mortgage lenders, who are facing some increase in loan defaults in certain regions, to specify to the responsible appraisers which of the two values - first or second owner - is to be estimated.

(*) The Thomas A. Prince computer model treats after-tax cash flow in each year (except the reversion from resale) as being received, in 1/12th instalments, each at the beginning of the month.

ALL INPUTS INVOLVING A % MUST BE ENTERED AS A DECIMAL EQUIVALENT [11.75%=.1175]

PROJECT ID (Maximum 30 characters per line)

100 1 YR OLD APT PROP 95% OCCUPIED

101 INVESTMENT VALUE TO 1ST OWNER

USED FOR ELLWOOD'S VALUATION

	AVG. ANNUAL NET INCOME	BEFORE TAX YIELD	AFTER TAX YIELD
102	390000	.11	.085

OPERATION CODE:
- → 1–Produces IMV for a given after tax equity yield rate
- 2–Produces four after tax equity yield rates for four given IMVs

NET INCOME CODE:
- 1–Constant net income value for each year
- → 2–Different net income value for each year (If the last year of the projection term does not fall in the last position of a line fill the remaining years of that line with zeros)

	OPERATION CODE	PROJECTION TERM (yrs)	NET INCOME CODE
103	1	12	2

NET INCOME [If net income is constant enter the value in position (1) only]

	(1)	(2)	(3)	(4)	(5)
104	400000	400000	400000	396000	392000
	(6)	(7)	(8)	(9)	(10)
105	388000	384000	380000	376000	372000
	(11)	(12)	(13)	(14)	(15)
106	368000	364000	0	0	0
	(16)	(17)	(18)	(19)	(20)
107					

OWNERSHIP FORM CODE:
- 1–Corporation (Operating losses applied to other investments)
- 2–Corporation (Operating losses carried back/carried over)
- 3–Corporation (Taxable income offset by losses from other investments)
- 4–Corporation (Set-up solely for this investment)
- → 5–Non-corporation (Operating losses applied to other investments)
- 6–Non-corporation (Operating losses carried back/carried over)
- 7–Non-corporation (Taxable income offset by losses from other investments)

EXCESS DEPRECIATION RECAPTURE CODE:
- 1–No recapture
- 2–FHA 221 (d) (3), 236 before 1975 (After 20 months-declines 1% per month)
- → 3–All other residential rentals (After 100 months-declines 1% per month)
- 4–All non-residential–100% recapture

	OWNERSHIP FORM CODE	FEDERAL TAX RATE	STATE TAX RATE	STATE CAPITAL GAINS RATE	EXCESS DEPRECIATION RECAPTURE CODE
108	5	.60	.09	.09	3

APPRECIATION/DEPRECIATION AT RESALE:

APP/DEP CODE:
- 1–% of IMV (Enter the % in the APP/DEP AT RESALE column)
- 2–$ amount (Enter the $ amount in the APP/DEP AT RESALE column)
- 3–Reversionary $ amount(Enter the $ amount in the APP/DEP AT RESALE column)

	APP/DEP CODE	APP/DEP AT RESALE ($ OR %)	SALES COMMISSION RATE (0 if none)
109	3	3419000	.02

DEPRECIABLE CAPITAL ASSETS:

ASSET CODE: Asset value as a:

→1–$ amount (Enter the $ amount in the ASSET VALUE column)
2–% of IMV (Enter the % in the ASSET VALUE column)
3–% of the difference between IMV and land value (Enter $ amount for land value in LAND VALUE column and the % in the ASSET VALUE column)

METHOD CODE:

1–Straight line
2–125%
3–150%
4–200%
→5–Sum-of-years-digits

	NUMBER OF ASSETS (0 to 6)	LAND VALUE (0 if ASSET CODE 3 is not used)
110	3	0

[Assets MUST be entered in order of ASCENDING ASSET CODES]

	ASSET CODE	ASSET VALUE ($ or %)	METHOD CODE	LIFE	SALVAGE (0 if none)
111	1	2590000	5	40	0
112	1	629000	5	22	0
113	1	481000	5	10	0
114					
115					
116					

MORTGAGES:

MORTGAGE CODE:

→1–Existing mortgage or mortgage of known $ amount (Enter the $ amount in the KEY FIGURE column)
2–New mortgage amount which is a % of IMV (Enter the ratio (%) in the KEY FIGURE column)

THE FOLLOWING TWO OPTIONS CANNOT BE USED SIMULTANEOUSLY

3–Secondary mortgage amount which is the difference between IMV and sum of known amounts for equity cash and the other mortgages (Enter the $ amount for cash equity in the KEY FIGURE column)
4–Secondary mortgage amount which is the difference between a total mortgage ratio and the sum of other mortgages of known amounts (Enter the total mortgage ratio (%) in the KEY FIGURE column)

TERM AND ANNUAL CONSTANT:

For each mortgage either the TERM or the ANNUAL CONSTANT must be provided except in the case of a balloon for which both must be provided. Enter a zero for the TERM or the ANNUAL CONSTANT, whichever is unknown. The annual constant must be at least 8 decimal places.

	NUMBER OF MORTGAGES (0 to 6)
117	2

[Mortgages MUST be entered in order of ASCENDING MORTGAGE CODES]

	MORTGAGE CODE	KEY FIGURES ($ or %)	INTEREST RATE	TERM (Months)	ANNUAL CONSTANT
118	1	3267000	.09	336	0
119	1	511000	.10	300	0
120					
121					
122					
123					

BEFORE TAX IMV(11.00%) $ 3957929
AFTER TAX IMV(8.50%) $ 4419676
DO YOU WANT DETAIL (0=NO,1=YES)?1

INVESTMENT MARKET VALUE ANALYSIS
1-YR OLD APT PROP 95% OCCUPIED
INVESTMENT VALUE TO 1ST OWNER

PREPARED BY A COMPUTER IN
CONSULTATION WITH M.B. HODGES,JR
6819 ELM ST. MCLEAN, VA. 22101 14:44EST 11/15/72

****
INVESTMENT MARKET VALUE:

AFTER TAX YIELD OF 8.50%: $ 4419676
****
DETAIL FOR AFTER TAX IMV

FINANCING:

MORTGAGES:

1.	9.000%	28 YRS	0 MONS	$	3267000
2.	10.000%	25 YRS	0 MONS	$	511000

EQUITY CASH: $ 641676

RESALE OF INVESTMENT IN 12 YEARS:

ESTIMATED RESALE PRICE	$	3419000
LESS: MORTGAGE BAL.		3113321
SALES COMMISSION		68380
CASH REVERSION BEFORE TAXES	$	237299
LESS: CAPITAL GAINS TAX(STD.)		286047
TAX ON RECAPTURED DEPR.		228415
TAX PREFERENCE TAX		0
CASH REVERSION AFTER TAXES	$	-277163

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	CASH FLOW BEFORE TAX	CASH FLOW AFTER TAX
1	400000	343813	268491	-212304	-125319	24256	149575
2	400000	340764	254101	-194865	-115667	24256	139923
3	400000	337425	239711	-177136	-105830	24256	130086
4	396000	333766	225321	-163087	-98334	20256	118590
5	392000	329757	210931	-148688	-90615	16256	106871
6	388000	325365	196540	-133905	-82653	12256	94909
7	384000	320552	182150	-118702	-74423	8256	82679
8	380000	315278	167760	-103038	-65532	4256	69788
9	376000	309500	153370	-86870	-55249	256	55505
10	372000	303169	138980	-70149	-44614	-3744	40870
11	368000	296231	124590	-52821	-33469	-7744	25725
12	364000	288629	118945	-43574	-27713	-11744	15969

BEFORE TAX IMV(11.00%) $ 3919359
AFTER TAX IMV(8.50%) $ 3980860
DO YOU WANT DETAIL (0=NO,1=YES)?1

INVESTMENT MARKET VALUE ANALYSIS
1-YR OLD APT PROP 95% OCCUPIED
INVESTMENT VALUE TO 2ND OWNER

PREPARED BY A COMPUTER IN
CONSULTATION WITH M.B. HODGES, JR
6819 ELM ST. MCLEAN, VA. 22101 14:49EST 11/15/72

****
INVESTMENT MARKET VALUE:

AFTER TAX YIELD OF 8.50%: $ 3980860
****
DETAIL FOR AFTER TAX IMV

FINANCING:

MORTGAGES:
1. 9.000% 28 YRS 0 MONS $ 3267000

EQUITY CASH: $ 713860

RESALE OF INVESTMENT IN 10 YEARS:

ESTIMATED RESALE PRICE $ 3530000

LESS: MORTGAGE BAL. 2847849
SALES COMMISSION 70600

CASH REVERSION BEFORE TAXES $ 611551

LESS: CAPITAL GAINS TAX(STD.) 256985
TAX ON RECAPTURED DEPR. 29904
TAX PREFERENCE TAX 12354

CASH REVERSION AFTER TAXES $ 312308

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	CASH FLOW BEFORE TAX	CASH FLOW AFTER TAX
1	400000	292931	155817	-48748	-30886	79978	110864
2	400000	290389	145174	-35563	-22618	79978	102596
3	400000	287609	135531	-23140	-14717	79978	94695
4	396000	284569	131847	-20416	-12984	75978	88962
5	392000	281243	128319	-17562	-11169	71978	83147
6	388000	277606	125770	-15376	-9779	67978	77757
7	384000	273627	123868	-13495	-8582	63978	72560
8	380000	269274	122025	-11299	-7186	59978	67164
9	376000	264514	120240	-8754	-5567	55978	61545
10	372000	259307	120240	-7547	-4799	51978	56777

V. Analysis of a Limited Partnership Prospectus

A. From the investor viewpoint there are five basic areas of consideration In the selection of limited partnership investment.

1. Strategic choice of property type
2. Attributes of specific property or property pool
3. The marketing method utilized to sell security
4. The use of incentive clauses for control of the general partner
5. The financial projection

B. The strategy in picking a property is to decide where on the time line you wish to commit because of the profit centers in which you wish to participate.

1. The profit centers
2. Position on the time line as a risk control device
3. Staging of capital outlay
4. Priority of claim on cash proceeds and tax shelters
5. Measures of yield

C. Attributes of specific property

1. A limited partnership share is a second mortgage revenue bond
2. Does it lower break-even point for high risk development venture?
3. Does it accelerate payback for the general or limited partner?
4. Does it retail sizzle for the cow carcass bought wholesale?

D. The marketing method utilized to sell security

1. Direct selling in the traditional real estate manner - high cost per unit sold for packager and high cost for investor because of brokers front end load.
2. The seminar approach - loss of credibility, loss of efficiency and now questions of legality.
3. Channeling through securities brokers (efficiency of mutual shares marketing but dependency on uninformed licensed security salesmen).
4. Marketing compensation consists of front-end loads, management fees, or praticipation in the event - % of asset or of money raised?

E. The use of incentive clauses for control of the general partner

1. Disenchantment clauses for replacement of general partner or property manager or both are critical.
2. Dissolution clauses for sale or refinancing must be watched carefully where general partner has participation.
3. Variance in projections must be controlled:

    a. Provision for cost guarantees
    b. Provision for earn-outs against absorption period
    c. Provision for loans and terms from general partner or assessment and penalties for limited partners for liquidity gaps

d. A guarantee against negative cash flows
e. Protection against construction of competitive units on adjacent property with 36 month option or right of first refusal.

4. Incentive clauses to make self interest of general partner the same as limited partner.

a. Management fee subject to downward adjustment each year if certain expenses have increased at a greater rate than gross income.
b. Bonus management fees for occupancy in excess of a stated level, say 94% or absorption rate in excess of some stated schedule.
c. Controls on GP access to certain profit centers such as leasing equipment to partnership, insurance premiums, or similar spinoffs contingent on meeting certain cash payouts to limited partners on a cumulative basis.

F. The financial projection

1. Should be tested for capacity to survive the surprise potential with variables which include payback ratio and cash breakeven point given definitions of returns to general partner. Be careful to define base for GP participation according to prospectus rather than according to sound financial principals.

G. Basic readings and periodicals with which the investment counselor should be familiar:

1. Real Estate Syndication Digest 1972, Principles and Applications, by Stephen E. Roulac, published by Real Estate Syndication Digest, San Francisco, California
2. The Real Estate Trusts: America's Newest Billionaires, by Kenneth Campbell, published by Audit Investment Research, Inc. 230 Park Avenue, New York
3. Real Estate Review quarterly magazine, 89 Beach Street, Boston, Mass.
4. Principles of Real Estate Syndication, Samuel K. Freshman, published by Parker & Son, 6500 Flotilla Street, Los Angeles, California 90040
5. The Mortgage & Real Estate Executives Report by Warren, Gorham & Lamont, Inc., 89 Brach Street, Boston, Mass. 02111
6. "Caveat Emptor in Real Estate Equities" by Samuel L. Hayes & Leonard M. Harlan, Harvard Business Review, March-April 1972
   or
   The Real Estate Appraiser, Summer 1972
7. Real Estate Securities & Syndication

VI. Recent innovations in financial analysis

A. Cash flow models discussed today process one set of numbers at a time to test a project for sensitivity to a change in assumption. It is possible, however, to build a model to permit introduction of certain variables as a range of numbers rather than a single point assumption.

1. Operational real estate investment probability or risk density models have been built in various parts of the country, including

   a. Professor Steve Pyhrr at University of Texas
   b. A graduate student group at the Harvard School of Business

2. Real estate portfolio risk models are also under development to apply "covariants investment theory" which is used for the securities market by various institutions

   a. Professor Pellatt of the University of Manitoba
   b. Wells Fargo Bank
   c. Various oil company investment departments

B. The impact of EDUCARE and the computer terminal

C. The availability of competing national services for cash flow analysis

D. The encroachment of sophisticated professionals in money management and capital budgeting on appraisal business

1. Professional accountants and engineering firms
2. Bank trust department advisory services
3. Increasing state and federal regulation and auditing of real estate investment performance on standards related to corporate security investment

Guide to Real Estate Investment Analysis
Tampa, Florida
by Professor James A. Graaskamp
January 10, 1974

AFTERNOON SESSION

I. Any measure of yield requires careful definition of what is an annual profit and what will be included in resale proceeds and an explicit assumption about the opportunity cost of money or the reinvestment rate.

A. Refer to definitions on page of Case problem #2.

B. Refer to alternative definitions of annual profits and sales proceeds as found in limited partnership agreements by Stephen Roulac.

"Annual Returns"

1. Taxable income,
2. Net profit only (i.e. not net loss),
3. Taxable income calculated on the basis of straight line depreciation,
4. Net profit calculated on the basis of straight line depreciation,
5. Cash available for distribution before allowance for reserves,
6. Cash available for distribution after allowance for reserves,
7. Cash actually distributed,
8. Cash available for distribution before allowance for reserves plus the amount of that year's principal payment on the mortgage debt,
9. Cash available for distribution after allowance for reserves plus the amount of that year's principal payment on the mortgage debt,
10. Cash actually distributed plus the amount of that year's principal payment on the mortgage debt,
11. Cash available for distribution before allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket,
12. Cash available for distribution after allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket.
13. Cash actually distributed plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket,
14. Cash available for distribution before allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket plus the amount of that year's principal payment on the mortgage debt,
15. Cash available for distribution after allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket plus the amount of that year's principal payment on the mortgage debt,
16. Cash actually distributed plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket, plus the amount of that year's principal payment on the mortgage debt.

Definitions of "Sales Proceeds"

1. Gross sales price,
2. Gross sales price less closing costs and real estate sales commissions, also known as the net sales price,

3. Net sales price less beginning mortgage balance,
4. Net sales price less mortgage balance at time of sale,
5. Net sales price less purchase price,
6. Net sales price less the mortgage balance at time of sale less the initial equity investment,
7. Net sales price less the mortgage balance at the time of sale less the initial equity investment plus the sum of returns, however defined, distributed to the limited partners,
8. Net sales price less the partners' basis for tax purposes (the purchase price less accumulated depreciation),
9. Net sales price less the partners' basis for tax purposes less the amount necessary to pay taxes at some specified rate,
10. All cash, after payment of mortgage balance at time of sale, including refund of working capital, unused reserves, and unallocated reserves.

C. Suggestions for the appraiser looking for a standard on which to base valuation judgments:

1. Relate to purpose of appraisal and significance of hard dollar and soft dollars to the viewpoint to be served
2. Ellwood method
3. EDUCARE standard models for the investor/buyer
4. Standard assumptions to be promulgated by SEC
5. The appraisal customer's ideal preferences

II. Modern management defines risk as the potential variance between expectations and realizations, i.e., between proforma prospects and balance sheet and P & L statements:

A. Dynamic risks can produce profit or loss and are best controlled by the finesse of management execution of a plan.

B. Static risks are those which can only cause a loss due to surprise upset of a plan.

C. Risk management has two objectives:

1. Conservation of existing enterprise assets despite surprise events
2. Realization of budgeted expectations despite surprise events

D. The process of risk management involves:

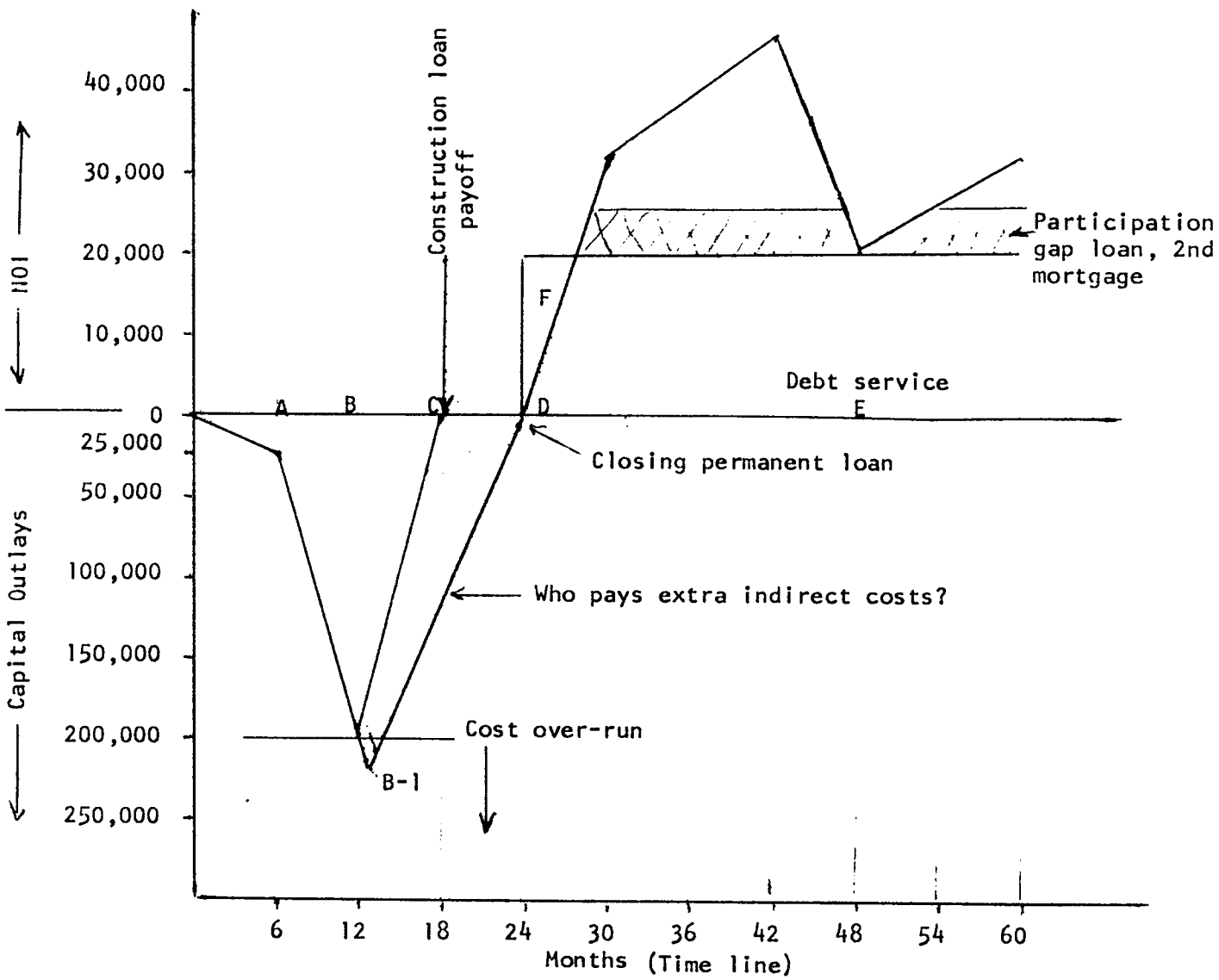
1. Identification of significant exposures to loss
2. Estimation of potential loss frequency and severity
3. Identification of alternative methods to avoid loss
4. Selection of a risk management method
5. Monitoring execution of risk management plan

E. Alternative methods for surviving potential risk losses:

1. Eliminate uncertainty (research or confirm)
2. Reduce frequency or severity of loss contingencies (incentive contracts)
3. Combine risks to increase predictability (reserves for expenses or pool investments)

4. Shift risk by contract (subcontracts or escape clauses)
5. Shift risk by combination by contract (insurance)
6. Limit maximum loss (corporate shell or limited partnership)
7. Hedging (gap financing)

F. A graphic representation of real estate cash flows will serve to review the nature of yield and risk control in real estate financing and investment and provide a method for analyzing loan opportunities or limited partnerships.



A = Start of construction
B = Estimated completion date
B-1 = Actual completion date
C = Construction loan payoff
C-D = Gap financing period
D-E = Positive cash flow and gap loan participation
F = Negative cash throw-off

III. Risk Analysis applied to a Mortgage Loan Application

A. Motivation to repay is primarily cash dividends

1. The pleasure, pain, bail-out principle
2. Identify profit centers for borrower or packager on timeline
3. Determine if major profit centers occur before or after closing of loan
4. Determine duration of cash dividends relative to duration of loan
5. Resources of borrower to cover capital outlay overrun
6. Cushion in cash-flow variance indicated by default ratio, expense ratios, and after-tax spendable cash
7. Management incentives created by ancillary contracts such as limited partnerships, earn-out land contracts, and profit sharing formulas

B. Bail-out--alternative use for property

1. Pain of equity loss in foreclosure is fictitious--consider payback ratio--thus, poor motivation
2. A better incentive "pain" technique would be a national black list for borrowers in default on mortgages to financial institutions maintained by federal regulatory authorities.
3. Threat of foreclosure implies lender has alternative use for property.
   a. Rents restructured to lender's cost to acquire
   b. Conversion of property
   c. Consideration of payback to be realized by drastic surgery such as charitable donation, demolition, financial reorganization, or joint venture resale to reshape management incentives.

IV. Risk Analysis applied to a Limited Partnership Prospectus

A. From the investor viewpoint there are five basic areas of consideration in the selection of limited partnership investment.

1. Strategic choice of property type
2. Attributes of specific property or property pool
3. The marketing method utilized to sell security
4. The use of incentive clauses for control of the general partner
5. The financial projection

B. Strategy is concerned with matching the risk to the profit center and thus the investment to the appropriate point on the timeline. For example:

1. The political risk of securing an approved development plan and the monopoly profit that results
2. The manufacturing profit of building
3. The profit of creating a captive market for services
4. The time horizon for build-out, payback, or yes-no decisions

C. A limited partnership share is a second mortgage revenue bond. Is its use appropriate to the financial attributes of specific property types?

1. Does it lower breakeven point for high risk development venture?
2. Does it accelerate payback for the general or limited partner?
3. Does it retail sizzle for the cow carcass bought wholesale?
4. Is liquidity of shares entirely dependent on liquidity of property?

D. The marketing method utilized to sell security

1. Direct selling in the traditional real estate manner--high cost per unit sold for packager and high cost for investor because of brokers front end load.
2. The seminar approach--loss of credibility, loss of efficiency and now questions of legality.
3. Channeling through securities brokers (efficiency of mutual shares marketing but dependency on uninformed licensed security salesmen).
4. Marketing compensation consists of front-end loads, management fees, or participation in the event--% of asset or of money raised?

E. The use of incentive clauses for control of the general partner

1. Disenchantment clauses for replacement of general partner or property manager or both are critical.
2. Dissolution clauses for sale or refinancing must be watched carefully where general partner has participation.
3. Variance in projections must be controlled:

   a. Provision for cost guarantees
   b. Provision for earn-outs against absorption period
   c. Provision for loans and terms from general partner or assessment and penalties for limited partners for liquidity gaps
   d. A guarantee against negative cash flows
   e. Protection against construction of competitive units on adjacent property with 36 month option or right of first refusal.

4. Incentive clauses to make self interest of general partner the same as limited partner.

   a. Management fee subject to downward adjustment each year if certain expenses have increased at a greater rate than gross income.
   b. Bonus management fees for occupancy in excess of a stated level, say 94% or absorption rate in excess of some stated schedule.
   c. Controls on GP access to certain profit centers such as leasing equipment to partnership, insurance premiums, or similar spinoffs contingent on meeting certain cash payouts to limited partners on a cumulative basis.

Reading References:

1. "Caveat Emptor in Real Estate Equities" by Samuel L. Hayes & Leonard M. Harlan, Harvard Business Review, March-April 1972; OR The Real Estate Appraiser, Summer 1972
2. Real Estate Securities and Syndication by Stephen E. Roulac, published by National Association of Real Estate Boards, Chicago, Ill.
3. Real Estate Venture Analysis, by Stephen Roulac, Published by Practising Law Institute, 1133 Avenue of the Americas, New York, N.Y. 10036
4. Real Estate Review quarterly magazine, 89 Beach Street, Boston, Mass.

2nd Edition

"MARKET VALUE" NOT ALWAYS APPLICABLE TO INVESTMENT PROPERTY OWNERS

"Market value", under its hundreds of state and federal court definitions, has been acceptable to the real estate appraiser as the fair measurement of just compensation (for all but special use properties) under eminent domain, estate and gift tax, property tax assessment and other situations. It is also applied as one of the two standards for assessment by assessment appraisers. Most definitions of market value mention a "price" and a "willing seller" and a "willing buyer". Even those which do not name or refer to a "seller" have been interpreted to carry the inference that the seller would be willing to sell at the price the buyer could afford to pay.

It is believed, however, the "market value" premise has been erroneous and thus inapplicable to numerous investment properties in the price range which attracts long term mortgagees and high tax bracket equity investors, ever since the investment market began to exploit the capital depreciation methods of the 1954 Internal Revenue Code. That code provided the first uses of the 200% of straight-line-declining-balance and the sum-of-the-years-digits methods; and the code has not been sufficiently modified by the 1962 and 1969 revisions to discourage but a small portion of investors in creating new properties or buying operating properties primarily - and often exclusively - for sheltering taxable income derived both from the newly acquired properties and from other investments and earnings.

This 7-page handout demonstrates the three major reasons for the obsolescence in the age-old definitions of market value: site cost basis, capital depreciation method, and secondary mortgage financing often provided by the seller of the land, on a non-transferable basis.

In this example the first owner of a one-year old, 250-unit apartment property has constructed the building on a site he acquired at a price of $720,000, $511,000 of which price was taken back as a deferred, long term purchase money trust to be subordinated to the mortgage loan on the completed property. The terms of the purchase money trust note call for full prepayment in event the property is resold.

Through his superlative mortgage financing and his use of the most accelerated depreciation method on the new building, the first owner and user of the property could not now afford to sell at the price which another investor in the same federal and state income tax brackets could afford to pay for the property, as the second user. Reasons: the second user could employ only 125% SL/DB depreciation, would not be allowed to claim that the non-depreciable asset, the land, is of less than $720,000 in value, and would not enjoy the long term second mortgage loan as would the first owner. The major assumptions in this example follow:

1. No monetary inflation or deflation considered; future net income and resale value forecast on basis of constant dollars. Equity yield employed matches the extrapolated yields from recently sold, similarly priced investment properties, all on the constant dollar premise.

2. Future resale value of the property, if held by the first owner for an optimum term of 12 years, is calculated to be the capitalized worth of the next average annual net income stream ($335,650 at OA rate of .10) less $250 per apartment unit for major capital replacements at date of future reversion; and, for the second owner, under his optimum ownership term of 10 years, to be the capitalized worth of the next average annual net income stream ($358,000 at OA rate of .10) less $200 per apartment unit.

3. The new first mortgage loan, closed two months ago when the building reached 85% occupancy, is more than the laughable "75% of value" to the second owner and user, but is quite typical and realistic. It is based upon a required 125%-of-debt-service (25% coverage ratio) against the "stablized" net annual income projected at 95% occupancy. The terms of this mortgage note do not preclude its assumption by another owner of the property, if approved by the mortgage lender.

4. First owner, for tax reasons, has capitalized some of his entreprenural expenses (mortgage and construction loan application fees, architectural and legal fees) as part of his capital costs, totalling $3,700,000; while today's hypothetical buyer and second user will be allowed to depreciate only that portion of his purchase price which excludes the $720,000 site value.

See next the two IMV computer printouts (*) showing,

Investment market value to the first owner = $4,419,676

Investment market value to the second owner = 3,980,860

Difference = 438,816 (11.02%)

Although the entreprenural builder-owner has not invested nearly as much cash as is indicated in the first computer printout, the equity cash figure shown represents the present worth of his entreprenural profit, his actual cash investment and the after-tax losses incurred in his expenses of construction loan interest, advertising and building operation during the rent-up period - all as of the date of valuation.

This real estate valuation analysis is written to invite attention to the need of some of the older professions and occupations to modernize their practises in dealing with this branch of land economics. It should also encourage the mortgage lenders, who are facing some increase in loan defaults in certain regions, to specify to the responsible appraisers which of the two values - first or second owner - is to be estimated.

(*) The Thomas A. Prince computer model treats after-tax cash flow in each year (except the reversion from resale) as being received, in 1/12th instalments, each at the beginning of the month.

ALL INPUTS INVOLVING A % MUST BE ENTERED AS A DECIMAL EQUIVALENT [11.75%=.1175]

PROJECT ID (Maximum 30 characters per line)

100 1 YR OLD APT PROP 95% OCCUPIED

101 INVESTMENT VALUE TO 1ST OWNER

USED FOR ELLWOOD'S VALUATION

	AVG. ANNUAL NET INCOME	BEFORE TAX YIELD	AFTER TAX YIELD
102	390000	.11	.085

OPERATION CODE:
- → 1–Produces IMV for a given after tax equity yield rate
- 2–Produces four after tax equity yield rates for four given IMVs

NET INCOME CODE:
- 1–Constant net income value for each year
- → 2–Different net income value for each year (If the last year of the projection term does not fall in the last position of a line fill the remaining years of that line with zeros)

	OPERATION CODE	PROJECTION TERM (yrs)	NET INCOME CODE
103	1	12	2

NET INCOME [If net income is constant enter the value in position (1) only]

	(1)	(2)	(3)	(4)	(5)
104	400000	400000	400000	396000	392000
	(6)	(7)	(8)	(9)	(10)
105	388000	384000	380000	376000	372000
	(11)	(12)	(13)	(14)	(15)
106	368000	364000	0	0	0
	(16)	(17)	(18)	(19)	(20)
107					

OWNERSHIP FORM CODE:
- 1–Corporation (Operating losses applied to other investments)
- 2–Corporation (Operating losses carried back/carried over)
- 3–Corporation (Taxable income offset by losses from other investments)
- 4–Corporation (Set-up solely for this investment)
- → 5–Non-corporation (Operating losses applied to other investments)
- 6–Non-corporation (Operating losses carried back/carried over)
- 7–Non-corporation (Taxable income offset by losses from other investments)

EXCESS DEPRECIATION RECAPTURE CODE:
- 1–No recapture
- 2–FHA 221 (d) (3), 236 before 1975 (After 20 months-declines 1% per month)
- → 3–All other residential rentals (After 100 months-declines 1% per month)
- 4–All non-residential–100% recapture

	OWNERSHIP FORM CODE	FEDERAL TAX RATE	STATE TAX RATE	STATE CAPITAL GAINS RATE	EXCESS DEPRECIATION RECAPTURE CODE
108	5	.60	.09	.09	3

APPRECIATION/DEPRECIATION AT RESALE:

APP/DEP CODE:
- 1–% of IMV (Enter the % in the APP/DEP AT RESALE column)
- 2–$ amount (Enter the $ amount in the APP/DEP AT RESALE column)
- 3–Reversionary $ amount (Enter the $ amount in the APP/DEP AT RESALE column)

	APP/DEP CODE	APP/DEP AT RESALE ($ OR %)	SALES COMMISSION RATE (0 if none)
109	3	3419000	.02

DEPRECIABLE CAPITAL ASSETS:

ASSET CODE: Asset value as a:

→1–$ amount (Enter the $ amount in the ASSET VALUE column)
2–% of IMV (Enter the % in the ASSET VALUE column)
3–% of the difference between IMV and land value (Enter $ amount for land value in LAND VALUE column and the % in the ASSET VALUE column)

METHOD CODE:

1–Straight line
2–125%
3–150%
4–200%
→5–Sum-of-years-digits

	NUMBER OF ASSETS (0 to 6)	LAND VALUE (0 if ASSET CODE 3 is not used)
110	3	0

[Assets MUST be entered in order of ASCENDING ASSET CODES]

	ASSET CODE	ASSET VALUE ($ or %)	METHOD CODE	LIFE	SALVAGE (0 if none)
111	1	2590000	5	40	0
112	1	629000	5	22	0
113	1	481000	5	10	0
114					
115					
116					

MORTGAGES:

MORTGAGE CODE:

→1–Existing mortgage or mortgage of known $ amount (Enter the $ amount in the KEY FIGURE column)
2–New mortgage amount which is a % of IMV (Enter the ratio (%) in the KEY FIGURE column)

THE FOLLOWING TWO OPTIONS CANNOT BE USED SIMULTANEOUSLY

3–Secondary mortgage amount which is the difference between IMV and sum of known amounts for equity cash and the other mortgages (Enter the $ amount for cash equity in the KEY FIGURE column)
4–Secondary mortgage amount which is the difference between a total mortgage ratio and the sum of other mortgages of known amounts (Enter the total mortgage ratio (%) in the KEY FIGURE column)

TERM AND ANNUAL CONSTANT:

For each mortgage either the TERM or the ANNUAL CONSTANT must be provided except in the case of a balloon for which both must be provided. Enter a zero for the TERM or the ANNUAL CONSTANT, whichever is unknown. The annual constant must be at least 8 decimal places.

	NUMBER OF MORTGAGES (0 to 6)
117	2

[Mortgages MUST be entered in order of ASCENDING MORTGAGE CODES]

	MORTGAGE CODE	KEY FIGURES ($ or %)	INTEREST RATE	TERM (Months)	ANNUAL CONSTANT
118	1	3267000	.09	336	0
119	1	511000	.10	300	0
120					
121					
122					
123					

```
BEFORE TAX IMV(11.00%) $  3957929
AFTER TAX IMV( 8.50%) $  4419676
DO YOU WANT DETAIL (0=NO,1=YES)?1


INVESTMENT MARKET VALUE ANALYSIS
1-YR OLD APT PROP 95% OCCUPIED
INVESTMENT VALUE TO 1ST OWNER

PREPARED BY A COMPUTER IN
CONSULTATION WITH M.B. HODGES,JR
6819 ELM ST.   MCLEAN, VA. 22101     14:44EST 11/15/72

**************************************************
INVESTMENT MARKET VALUE:

      AFTER TAX YIELD OF    8.50%:         $  4419676
**************************************************
              DETAIL FOR AFTER TAX IMV

FINANCING:

        MORTGAGES:
             1.    9.000%  28 YRS  0 MONS  $  3267000
             2.   10.000%  25 YRS  0 MONS  $   511000

        EQUITY CASH:                        $   641676


RESALE OF INVESTMENT IN 12 YEARS:

        ESTIMATED RESALE PRICE              $  3419000

          LESS: MORTGAGE BAL.                  3113321
                SALES COMMISSION                68380

        CASH REVERSION BEFORE TAXES         $   237299

          LESS: CAPITAL GAINS TAX(STD.)        286047
                TAX ON RECAPTURED DEPR.        228415
                TAX PREFERENCE TAX                  0

        CASH REVERSION AFTER TAXES          $  -277163
```

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	CASH FLOW BEFORE TAX	CASH FLOW AFTER TAX
1	400000	343813	268491	-212304	-125319	24256	149575
2	400000	340764	254101	-194865	-115667	24256	139923
3	400000	337425	239711	-177136	-105830	24256	130086
4	396000	333766	225321	-163087	-98334	20256	118590
5	392000	329757	210931	-148688	-90615	16256	106871
6	388000	325365	196540	-133905	-82653	12256	94909
7	384000	320552	182150	-118702	-74423	8256	82679
8	380000	315278	167760	-103038	-65532	4256	69788
9	376000	309500	153370	-86870	-55249	256	55505
10	372000	303169	138980	-70149	-44614	-3744	40870
11	368000	296231	124590	-52821	-33469	-7744	25725
12	364000	288629	118945	-43574	-27713	-11744	15969

```
BEFORE TAX IMV(11.00%) $  3919359
AFTER TAX IMV( 8.50%) $  3980860
DO YOU WANT DETAIL (0=NO,1=YES)?1
```

INVESTMENT MARKET VALUE ANALYSIS
1-YR OLD APT PROP 95% OCCUPIED
INVESTMENT VALUE TO 2ND OWNER

PREPARED BY A COMPUTER IN
CONSULTATION WITH M.B. HODGES, JR
6819 ELM ST. MCLEAN, VA. 22101 14:49EST 11/15/72

****
INVESTMENT MARKET VALUE:

AFTER TAX YIELD OF 8.50%: $ 3980860
****

DETAIL FOR AFTER TAX IMV

FINANCING:

MORTGAGES:

1.	9.000%	28 YRS	0 MONS	$	3267000

EQUITY CASH: $ 713860

RESALE OF INVESTMENT IN 10 YEARS:

ESTIMATED RESALE PRICE	$ 3530000
LESS: MORTGAGE BAL.	2847849
SALES COMMISSION	70600
CASH REVERSION BEFORE TAXES	$ 611551
LESS: CAPITAL GAINS TAX(STD.)	256985
TAX ON RECAPTURED DEPR.	29904
TAX PREFERENCE TAX	12354
CASH REVERSION AFTER TAXES	$ 312308

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	CASH FLOW BEFORE TAX	CASH FLOW AFTER TAX
1	400000	292931	155817	-48748	-30886	79978	110864
2	400000	290389	145174	-35563	-22618	79978	102596
3	400000	287609	135531	-23140	-14717	79978	94695
4	396000	284569	131847	-20416	-12984	75978	88962
5	392000	281243	128319	-17562	-11169	71978	83147
6	388000	277606	125770	-15376	-9779	67978	77757
7	384000	273627	123868	-13495	-8582	63978	72560
8	380000	269274	122025	-11299	-7186	59978	67164
9	376000	264514	120240	-8754	-5567	55978	61545
10	372000	259307	120240	-7547	-4799	51978	56777

A Computer Terminal Teaching Model by EDUCARE

```
CREATE DEMO,,

READY          (1)


RUN LDM

LDM          20:33CDT

INPUT FILE, MODEL NAME? LDM1,DEMO
                                      (2)
ACRES ACQUIRED? 20
                  (3)
$/ACRE? 1500
          (4)
RATIO: LOAN $/ACRE $ ? .95
                          (5)
UNITS/ACRE? 2.5
              (6)
UNITS DEVELOPED? 15,15,20
                         (7)
DEV $/UNIT? 3500
              (8)
RATIO: LOAN $/DEV $? .90
                        (9)
UNITS SOLD? 10,15,15,8,2
                        (10)
SALES $/UNIT SOLD? 8000
                       (11)
LOAN INT RATE FOR LAND? .10
   FOR DEVELOPMENT? .10  (12)

RATIO: LAND LOAN REPMT/SALES $? .25
                                   (13)
RATIO: DEV LOAN REPMT/SALES $? .50
                                  (14)
EFF. R.E. TAX RATE? .024  (15)
```

```
PROJECT TITLE? DEMONSTRATION CASE

# OF CHAR PER COL? 10
# OF COLUMNS? 5          (16)
ENTER COLUMN HEADINGS FOR:
 COL # 1 ? 1974
 COL # 2 ? 1975
 COL # 3 ? 1976          (17)
 COL # 4 ? 1977
 COL # 5 ? 1978

USED     1.43 UNITS


RUN FAL***

FAL          20:38CDT

MODEL NAME?DEMO          (18)

COMMAND?PRINT REPORTS 1 2
                         (19)
```

DATA SUMMARY

	1974	1975	1976	1977	1978
$/ACRE	1,500	1,500	1,500	1,500	1,500
R.E. TAX RATE	.024	.024	.024	.024	.024
LOAN $/ACRE $	.950	.950	.950	.950	.950
DEV $/UNIT	3,500	3,500	3,500	3,500	3,500
LOAN $/DEV $	.900	.900	.900	.900	.900
$/UNIT SOLD	8,000	8,000	8,000	8,000	8,000
LOAN RPMT RATE					
LAND	.250	.250	.250	.250	.250
DEV	.500	.500	.500	.500	.500
LAND LOAN					
AMT	28,500	-	-	-	-
BAL	8,500	-	-	-	-
DEV LOAN					
AMT	47,250	47,250	63,000	-	-
BAL	7,250	-	3,000	-	-
EQUITY					
LAND	1,500	-	-	-	-
DEV	5,250	5,250	7,000	-	-

LAND DEVELOPMENT CASH FLOW
DEMONSTRATION CASE

	1974	1975	1976	1977	1978
ACRES ACQUIRED	20.0	-	-	-	-
ACRES AVAILABLE	14.0	8.0	-	-	-
UNITS DEV.	15	15	20	-	-
UNITS SOLD	10	15	15	8	2
UNSOLD UNITS	5	5	10	2	-
RECEIPTS					
SALES	80,000	120,000	120,000	64,000	16,000
INV. EQ.	1,500	-	-	-	-
LAND LOAN	28,500	-	-	-	-
DEV. LOAN	47,250	47,250	63,000	-	-
TOTAL	157,250	167,250	183,000	64,000	16,000
DISBURSEMENTS					
LAND					
COST	30,000	-	-	-	-
LOAN PRIN	20,000	8,500	-	-	-
LOAN INT	2,850	850	-	-	-
TAXES	504	288	-	-	-
DEVELOPMENT					
COST	52,500	52,500	70,000	-	-
LOAN PRIN	40,000	54,500	60,000	3,000	-
LOAN INT	4,725	5,450	6,300	300	-
TAXES ON					
UNSOLD UNITS	960	960	1,920	384	-
TOTAL	151,539	123,048	138,220	3,684	-
NET FLOW	-5,711	-44,202	-44,780	-60,316	-16,000

COMMAND?STOP (20)

PROGRAM STOP AT 2290

USED 4.34 UNITS
RUN COST

COST 20:45CDT

ACCRUED CHARGES SINCE SIGNIN
$ 2.73 COMPUTER (21)
$ 1.72 CONNECT
$ 1.12 CHARACTERS
$ 5.57 TOTAL(95.26)

USED .11 UNITS
BYE
0008.30 CRU 0000.25 TCH 0004.63 KC

OFF AT 20:45CDT 10/19/73

```
DEMO        20:38CDT

10 DATA
15 491 20
20 330 1500 *
25 380 .95 *
30 302 2.5 *
35 493 15 15 20
40 390 3500 *
42 400 .90 *
45 494 10 15 15 8 2
55 420 8000 *
60 303 .10 .10
65 422 .25 *
70 424 .50 *
75 340 .024 *
100 OPTIONS
110 USE LDM1$$
120 WIDTH 71
130 REPEATT
140 REPEATH
200 TITLE
210 330 490 1 25 1
220 "DATA SUMMARY"
230 TITLE
240 491 640 1 25 1
250 "LAND DEVELOPMENT CASH FLOW"
255 "DEMONSTRATION CASE"
260 COLUMNS
271 10 "1974"
272 10 "1975"
273 10 "1976"
274 10 "1977"
275 10 "1978"
300 ROWS
302 "UNITS/ACRE"
303 "INT RATES"
330 "$/ACRE"
340 D3 "R.E. TAX RATE"
380 D3 "LOAN $/ACRE $"
390 "DEV $/UNIT"
400 D3 "LOAN $/DEV $"
420 "$/UNIT SOLD"
422 D3 "LOAN RPMT RATE" " LAND"
424 D3 " DEV"
440 "LAND LOAN" " AMT"
450 " BAL"
460 "DEV LOAN" " AMT"
470 " BAL"
480 "EQUITY" " LAND"
490 " DEV"
491 D1 "ACRES ACQUIRED"
492 D1 "ACRES AVAILABLE"
493 "UNITS DEV."
494 "UNITS SOLD"
495 "UNSOLD UNITS"
500 "
```

(Listing is incomplete)